

Test Procedure for §170.314 (a)(14) Patient list creation

This document describes the test procedure for evaluating conformance of complete EHRs or EHR modules 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 document¹ is organized by test procedure and derived test requirements with traceability to the normative certification criteria as described in the Overview document located at [available when final]. The test procedures may be updated to reflect on-going feedback received during the certification activities.

The 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 HIT Certification Program², is carried out by National Voluntary Laboratory Accreditation Program-Accredited Testing Laboratories (NVLAP-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.

§170.314(a)(14) Patient list creation. Enable a user to electronically and dynamically select, sort, access, and create patient lists by: date and time; and based on each one and at least one combination of the following data:

- (i) Problems;
- (ii) Medications;
- (iii) Medication allergies;
- (iv) Demographics;

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

- (v) Laboratory tests and values/results; and
- (vi) Ambulatory setting only. Patient communication preferences.

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.

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 patient list creation certification criterion is discussed:

- “...we compared this certification criterion with the “patient lists” certification criterion (proposed at 170.314(a)(14)) and have determined these two certification criteria should be combined into a single certification criterion. At a high-level, both require EHR technology to be able to electronically create a list of patients. However, where the “patient lists” certification criterion includes more specific filtering, the “patient reminders” does not, but it does include two additional data elements (medication allergies, patient’s communication preference). Accordingly, we have finalized a single certification criterion that merges the strengths of each certification criterion as well as...a date/time component. We believe this single certification criterion will be clearer for EHR technology developers and will more clearly express the kind of capability EHR technology must include in order to be certified.”
- “Within the certification criterion, we interpret “select” to mean filter and “sort” to mean that the user gets to provide a sequence or range (e.g., by hemoglobin A1C levels).”
- “For consistency purposes, we have included the same revisions we have made in other certification criteria and state “each one and at least one combination...” to indicate that EHR technology must be able to create a list based on each element separately as well as based on at least one combination of any of the data.”
- “EHR technology designed for an ambulatory setting must support an EP, EH, or CAH’s ability to record a patient’s communication preference, which we believe is explicitly clear in the revised combined certification criterion.”
- “...we would anticipate that EPs, EHs, and CAHs could use communication mediums made available by EHR technology certified to the proposed “secure messaging” certification criterion (§170.314(e)(3)) or the “view, download and transmit to 3rd party” certification criterion (§170.314(e)(1)) to send patient reminders. Last, we stated that we anticipated that other modes of communication would be available and may be preferred by patients for sending patient reminders, such as regular mail.”

Per Section III.D of the preamble of the Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology, Final Rule where the generate patient lists certification criterion is discussed:

- “It was our intention that Certified EHR Technology would be able to leverage the information, specifically the structured data it has available to it, to assist eligible professionals and eligible hospitals to generate patient lists. We have clarified this certification criterion to express this intent. Accordingly, we expect that Certified EHR Technology will be able to generate patient lists according to certain data elements for which structured data will be available: medical problems; medications; demographics; and laboratory test results.”
- “...we have removed “patient’s clinical information” and “specific conditions” from the certification criterion, and have reframed the certification criterion to more directly align with the meaningful use measure by changing “output” to “generate.” We sought to clarify that we intended that Certified EHR technology would be capable of electronically producing or “generating” patient lists for an eligible professional or eligible hospital’s subsequent use. We do not require as a condition of certification that time periods be associated with a patient list, but presumably time (i.e., the age of the information) could be one factor an eligible professional or eligible hospital could also use to sort their lists (e.g., patients with XYZ problem recorded in the past 3 months).”

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 patient list creation certification criterion is discussed:

- “...we compared this certification criterion with the “patient lists” certification criterion (proposed at § 170.314(a)(14)) and have determined that these two certification criteria should be combined into a single certification criterion. At a high-level, both require EHR technology to be able to electronically create a list of patients. However, where the “patient lists” certification criterion includes more specific filtering, the “patient reminders” does not, but it does include two additional data elements (medication allergies, patient’s communication preference).”
- “Accordingly, we have finalized a single certification criterion that merges the strengths of each certification criterion as well as this commenter’s suggestion for a date/time component.”
- “...we have included the same revisions we have made in other certification criteria and state “each one and at least one combination...” to indicate that EHR technology must be able to create a list based on each element separately as well as based on at least one combination of any of the data.”

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 a Complete EHR or EHR Module to enable a user to electronically and dynamically select, sort, access, and create patient lists by date and time and based on data from each one and at least one combination of data from two or more of the following data categories: problems, medications, medication allergies, demographics, laboratory tests and values/results, and, in the ambulatory setting only, patient communication preferences.

While this criterion does not include requirements for documenting in the EHR that reminders have been communicated to the patient, a separate criterion *170.314 (g)(2) Automate measure calculation* describes the requirements for calculating and reporting the associated percentage-based measure. The automatic capturing of reminders sent to patients could be used to aid in this calculation.

The Vendor provides the test data for this test procedure.

This test procedure is organized into three sections:

- Select - evaluates the capability for a user to electronically and dynamically select by date and time
 - For the ambulatory setting
 - At least one list of patients using data elements from the Problem list; at least one list of patients using data elements from the Medication list; at least one list of patients using data elements from the Medication Allergy list; at least one list of patients using data elements from Demographics; at least one list of patients using data elements from Laboratory tests and values/results; and at least one list of patients using data elements based on Patient communication preferences
 - At least one list of patients based on a combination of data elements from two or more of the following categories: the Problem list, Medication list, Medication Allergy list, Demographics, Laboratory tests and values/results, and Patient communication preferences
 - For the inpatient setting
 - At least one list of patients using data elements from the Problem list; at least one list of patients using data elements from the Medication list; at least one list of patients using data elements from the Medication Allergy list; at least one list of patients using data elements from Demographics; and at least one list of patients using data elements from Laboratory tests and values/results
 - At least one list of patients based on a combination of data elements from two or more of the following categories: the Problem list, Medication list, Medication Allergy list, Demographics, and Laboratory tests and values/results
 - Ambulatory setting:
 - Using Vendor-supplied test data, the Tester selects at least one list of patients by date and time and based on data elements included in the Problem list; at least one list of patients by date and time and based on data elements included in the Medication list; at least one list of patients by date and time and based on data

- elements included in the Medication Allergy list; at least one list of patients by date and time and based on data elements included in the Demographics; at least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results; and at least one list of patients by date and time and based on data elements included in the Patient communication preferences
 - Using Vendor-supplied test data, the Tester selects at least one list of patients by date and time and based on a combination of two or more data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, Laboratory tests and values/results, and Patient communication preferences
 - The Tester validates that these patient lists are accurate and complete, and that they are being selected electronically and dynamically
- Inpatient setting:
 - Using Vendor-supplied test data, the Tester selects at least one list of patients by date and time and based on data elements included in the Problem list; at least one list of patients by date and time and based on data elements included in the Medication list; at least one list of patients by date and time and based on data elements included in the Medication Allergy list; at least one list of patients by date and time and based on data elements included in the Demographics; at least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results
 - Using Vendor-supplied test data, the Tester selects at least one list of patients by date and time and based on a combination of two or more data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, and Laboratory tests and values/results
 - The Tester validates that these patient lists are accurate and complete, and that they are being selected electronically and dynamically
- Sort and Access – evaluates the capability for a user to electronically and dynamically 1) access lists of patients that are selected based on date and time and the Vendor-supplied test data for the data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, Laboratory tests and values/results, and, in the ambulatory setting only, patient communication preferences, and 2) sequence or arrange the data on each patient list using the date and time and those data elements
 - For the ambulatory setting:
 - The Tester accesses and displays the lists of patients selected in the Select test
 - The Tester sequences or arranges the data on each patient list using the date and time and the data elements, including data elements in the Problem list, Medication list, Medication Allergy list, Demographics, Laboratory tests and values/results, and Patient communication preferences
 - The Tester validates that the patient data on each list are sequenced or arranged by date and time and using data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, Laboratory tests values/results, and Patient communication preferences

- For the inpatient setting:
 - The Tester accesses and displays the lists of patients selected in the Select test
 - The Tester sequences or arranges the data on each patient list using the date and time and the data elements, including data elements in the Problem list, Medication list, Medication Allergy list, Demographics, and Laboratory tests and values/results
 - The Tester validates that the patient data on each list are sequenced or arranged by date and time and using data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, and Laboratory tests values/results
- Create – evaluates the capability for a user to electronically and dynamically generate the lists of patients
 - For the ambulatory setting:
 - The Tester generates the lists of patients selected in the Select test or accessed and sorted in the Sort and Access test The Tester validates that the generated lists of patients are produced, and that the lists are accurate and complete
 - For the inpatient setting:
 - The Tester generates the lists of patients selected in the Select test or accessed and sorted in the Sort and Access test
 - The Tester validates that the created lists of patients are produced, and that the lists are accurate and complete

REFERENCED STANDARDS

None

NORMATIVE TEST PROCEDURES – AMBULATORY SETTING

Derived Test Requirements

DTR170.314.a.14 – 1: Electronically and Dynamically Select Lists of Patients

DTR170.314.a.14 – 2: Electronically and Dynamically Sort and Access Lists of Patients

DTR170.314.a.14 – 3: Electronically and Dynamically Create Lists of Patients

DTR170.314.a.14 – 1: Electronically Select Lists of Patients

Required Vendor Information

VE170.314.a.14 – 1.01: Vendor shall identify lists of patients available for this test

VE170.314.a.14 – 1.02: Vendor shall provide the test data for this test

VE170.314.a.14 – 1.03: Vendor shall identify the EHR function(s) that are available to:

- 1) Electronically and dynamically select at least one list of patients by date and time and based on data elements included in the Problem list, at least one list of patients by date and time and based on data elements included in the Medication list, at least one list of patients by date and time and based on data elements included in the Medication Allergy list, at least one list of patients by date and time and based on data elements included in the Demographics, at least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results, at least one list of patients by date and time and based on data elements included in Patient communication preferences, and at least one list of patients by date and time and based on at least one combination of two or more of the data elements included in those data categories
- 2) Electronically and dynamically sort and access at least one list of patients by date and time and based on data elements included in the Problem list, at least one list of patients by date and time and based on data elements included in the Medication list, at least one list of patients by date and time and based on data elements included in the Medication Allergy list, at least one list of patients by date and time and based on data elements included in the Demographics, at least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results, at least one list of patient by date and time and based on data elements included in Patient communication preferences, and at least one list of patients by date and time and based on at least one combination of two or more of the data elements included in those data categories
- 3) Electronically and dynamically generate at least one list of patients by date and time and based on data elements included in the Problem list, at least one list of patients by date and time and based on data elements included in the Medication list, at least one list of patients by date and time and based on data elements included in the Medication Allergy list, at least one list of patients by date and time and based on data elements included in the

Demographics, at least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results, at least one list of patient by date and time and based on data elements included in patient communication preferences, and at least one list of patients by date and time and based on at least one combination of two or more of the data elements included in those data categories

Required Test Procedures:

TE170.314.a.14 – 1.01: Using the Vendor-identified EHR function(s) and Vendor-supplied test data, the Tester shall select

- At least one list of patients by date and time and based on data elements included in the Problem list
- At least one list of patients by date and time and based on data elements included in the Medication list
- At least one list of patients by date and time and based on data elements included in the Medication Allergy list
- At least one list of patients by date and time and based on data elements included in the Demographics
- At least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results
- At least one list of patients by date and time and based on data elements included in the Patient communication preferences

TE170.314.a.14 – 1.02: Using the Vendor-identified EHR function(s), the Tester shall select at least one list of patients by date and time and based on at least one combination of two or more data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, Laboratory tests and values/results, and Patient communication preferences.

TE170.314.a.14 – 1.03: Using the Inspection Test Guide, the Tester shall verify that the selected lists of patients are by date and time and based on the named data elements

Inspection Test Guide

IN170.314.a.14 – 1.01: Using the Vendor-supplied test data, the Tester shall verify that the lists of patients are selected by date and time and based on data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, Laboratory tests and values/results, and Patient communication preferences; that at least one patient list is based on at least one combination of two or more of the data elements included; that the data included on the lists of patients are accurate and complete; and that the lists are selected electronically and dynamically

DTR170.314.a.14 – 2: Electronically Sort and Access Lists of Patients

Required Vendor Information

- As defined in DTR170.314.a.14 – 1, no additional information is required

Required Test Procedures

TE170.314.a.14 – 2.01: Using the patient lists selected in the DTR170.314.a.14 – 1: Electronically and Dynamically Select Lists of Patients test and the Vendor-identified EHR function(s), the Tester shall access and display two or more of the lists of patients

TE170.314.a.14 – 2.02: Using the Vendor-identified EHR function(s), the Tester shall sort these lists of patients by date and time and based on the data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, Laboratory tests and values/results, and Patient communication preferences

TE170.314.a.14 – 2.03: Using the Inspection Test Guide, the Tester shall verify that the lists of patients are sorted according to the requirements in the criterion

Inspection Test Guide

IN170.314.a.14 – 2.01: Using the Vendor-supplied test data, the Tester shall verify that the accessed lists of patients are sorted by date and time and based on the data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, Laboratory tests and values/results, and Patient communication preferences

DTR170.314.a.14 – 3: Electronically Create Lists of Patients

Required Vendor Information

- As defined in DTR170.314.a.14 – 1, no additional information is required

Required Test Procedures

TE170.314.a.14 – 3.01: Using the Vendor-identified EHR function(s) and the patient lists selected in the DTR170.314.a.14 – 1: Electronically and Dynamically Select Lists of Patients test and/or accessed and sorted in the DTR170.314.a.14 – 2: Electronically and Dynamically Sort and Access Lists of Patients test , the Tester shall generate two or more lists of patients

TE170.314.a.14 – 3.02: Using the Inspection Test Guide, the Tester shall verify that the lists of patients are generated

Inspection Test Guide

IN170.314.a.14 – 3.01: Using the Vendor-supplied test data, the Tester shall verify that the selected and/or sorted and accessed patient lists are generated correctly and without omission

NORMATIVE TEST PROCEDURES – INPATIENT SETTING

Derived Test Requirements

DTR170.314.a.14 – 4: Electronically and Dynamically Select Lists of Patients

DTR170.314.a.14 – 5: Electronically and Dynamically Sort and Access Lists of Patients

DTR170.314.a.14 – 6: Electronically and Dynamically Create Lists of Patients

DTR170.314.a.14 – 4: Electronically Select Lists of Patients

Required Vendor Information

VE170.314.a.14 – 4.01: Vendor shall identify lists of patients available for this test

VE170.314.a.14 – 4.02: Vendor shall provide the test data for this test

VE170.314.a.14 – 4.03: Vendor shall identify the EHR function(s) that are available to:

- 1) Electronically and dynamically select at least one list of patients by date and time and based on data elements included in the Problem list, at least one list of patients by date and time and based on data elements included in the Medication list, at least one list of patients by date and time and based on data elements included in the Medication Allergy list, at least one list of patients by date and time and based on data elements included in the Demographics, at least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results, at least one list of patient by date and time and based on data elements included in patient communication preferences, and at least one patient list by date and time and based on at least one combination of two or more of the data elements included in those data categories
- 2) Electronically and dynamically sort and access at least one list of patients by date and time and based on data elements included in the Problem list, at least one list of patients by date and time and based on data elements included in the Medication list, at least one list of patients by date and time and based on data elements included in the Medication Allergy list, at least one list of patients by date and time and based on data elements included in the Demographics, at least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results, at least one list of patient by date and time and based on data elements included in patient communication preferences, and at least one list of patients by date and time and based on at least one combination of two or more of the data elements included in those data categories
- 3) Electronically and dynamically generate at least one list of patients by date and time and based on data elements included in the Problem list, at least one list of patients by date and time and based on data elements included in the Medication list, at least one list of patients by date and time and based on data elements included in the Medication Allergy list, at least one list of patients by date and time and based on data elements included in the Demographics, at least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results, and at least one list of patients by date and time and based on at least one

combination of two or more of the data elements included in those data categories

Required Test Procedures

TE170.314.a.14 – 4.01: Using the Vendor-identified EHR function(s) and Vendor-supplied test data, the Tester shall select

- At least one list of patients by date and time and based on data elements included in the Problem list
- At least one list of patients by date and time and based on data elements included in the Medication list
- At least one list of patients by date and time and based on data elements included in the Medication Allergy list
- At least one list of patients by date and time and based on data elements included in the Demographics
- At least one list of patients by date and time and based on data elements included in the Laboratory tests and values/results

TE170.314.a.14 – 4.02: Using the Vendor-identified EHR function(s), the Tester shall select at least one list of patients by date and time and based on at least one combination of two or more data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, and Laboratory tests and values/results.

TE170.314.a.14 – 4.03: Using the Inspection Test Guide, the Tester shall verify that the selected lists of patients are by date and time and based on the named data elements

Inspection Test Guide

IN170.314.a.14 – 4.01: Using the Vendor-supplied test data, the Tester shall verify that the lists of patients are selected by date and time and based on data elements included in the Problem list, Medication list, Medication Allergy list, Demographics, and Laboratory tests and values/results; that at least one patient list is based on at least one combination of two or more of the data elements included; that the data included on the lists of patients are accurate and complete; and that the lists are selected electronically and dynamically

DTR170.314.a.14 – 5: Electronically Sort and Access Lists of Patients

Required Vendor Information

- As defined in DTR170.314.a.14 – 4, no additional information is required

Required Test Procedures

TE170.314.a.14 – 5.01: Using the patient lists selected in the DTR170.314.a.14 – 4: Electronically and Dynamically Select Lists of Patients test and the Vendor-identified EHR function(s), the Tester shall access and display two or more of the lists of patients

TE170.314.a.14 – 5.02: Using the Vendor-identified EHR function(s), the Tester shall sort these lists of patients by date and time and based on the data elements included in the

Problem list, Medication list, Medication Allergy list, Demographics, and
Laboratory tests and values/results

TE170.314.a.14 – 5.03: Using the Inspection Test Guide, the Tester shall verify that the lists of patients
are sorted according to the requirements in the criterion

Inspection Test Guide

IN170.314.a.14 – 5.01: Using the Vendor-supplied test data, the Tester shall verify that the accessed lists
of patients are sorted by date and time and based on the data elements included
in the Problem list, Medication list, Medication Allergy list, Demographics, and
Laboratory tests and values/results

DTR170.314.a.14 – 6: Electronically Create Lists of Patients

Required Vendor Information

- As defined in DTR170.314.a.14 – 4, no additional information is required

Required Test Procedures

TE170.314.a.14 – 6.01: Using the Vendor-identified EHR function(s) and the patient lists selected in the
DTR170.314.a.14 – 3: Electronically and Dynamically Select Lists of Patients test
and/or accessed and sorted in the DTR170.314.a.14 – 4: Electronically and
Dynamically Sort and Access Lists of Patients test, the Tester shall generate two
or more lists of patients

TE170.314.a.14 – 6.02: Using the Inspection Test Guide, the Tester shall verify that the lists of patients
are generated

Inspection Test Guide

IN170.314.a.14 – 6.01: Using the Vendor-supplied test data, the Tester shall verify that the selected,
and/or sorted and accessed patient lists are generated correctly and without
omission

TEST DATA

This Test Procedure requires the vendor to supply the test data. The Tester shall address the following:

- Vendor-supplied test data shall ensure that the functional and interoperable requirements identified in the criterion can be adequately evaluated for conformance
- Vendor-supplied test data shall strictly focus on meeting the basic capabilities required of an EHR relative to the certification criterion rather than exercising the full breadth/depth of capability that an installed EHR might be expected to support
- Tester shall record as part of the test documentation the specific Vendor-supplied test data that was utilized for testing

CONFORMANCE TEST TOOLS

None

Document History

Version Number	Description	Date Published
1.0	Released for public comment	September 14, 2012