

## 2014 Edition Test Scenarios Overview Presentation Companion Narrative

This document is a companion narrative for the 2014 Edition Test Scenarios Overview Deck which contains a description of the benefits, development, and structure of the draft test scenario procedure.

### SLIDE ONE: PURPOSE OF SCENARIO-BASED TESTING

Test scenarios link unit test procedures to make testing clinically plausible. In other words, a test flow aligns with a plausible clinical workflow. Test scenarios evaluate the ability of electronic health record (EHR) technology to use data stored within the EHR across systems (i.e. across multiple EHRs) and within a single system (i.e. within one EHR). Scenario-based testing increases value, improves efficiency, and reduces setup of testing while making testing consistent and replicable.

### SLIDE TWO: UNIT-BASED TESTING

Unit-based testing is currently in use for testing against certification to the 2011 and 2014 Edition Standards and Certification Criteria. The 2011 and 2014 Edition Test Procedures posted to the ONC website are unit tests. A unit test evaluates the conformance of EHR technology to a single certification criterion. Each unit test is independent, and uses individually provided or specified test data. The test data and/or result(s) from one unit test does not affect other unit tests. At the minimum, an EHR technology must conform to these unit tests in order to be certified.

### SLIDE THREE: SCENARIO-BASED TESTING

Scenario-based testing will be an alternative to unit-based testing. However, while unit-based testing is required for both 2011 and 2014 Edition testing, scenario-based testing will only be optional for use in 2014 Edition testing. An important part of the development of this option is input from the public.

Test scenarios link unit tests to make testing clinically plausible and evaluate an EHR technology's ability to use data stored in the EHR. Thus, the tests, test data, and test results are all dependent. The test result/output from one test is the test data input for the subsequent tests. A unit test can be removed ("popped" out) from a scenario for various reasons (for instance, when a unit test is not applicable to a specific setting).

### SLIDE FOUR: 2014 EDITION TEST SCENARIOS – QUICK FACTS

The 2014 Edition Test Scenarios are being developed for use in testing conformance to the 2014 Edition Standards and Certification Criteria as part of the 2014 Edition Test Method. The test data within these scenarios are consistent and threaded.

Rather than focusing on entire settings (inpatient or ambulatory), the draft test scenarios under development focus on smaller sets of criteria in scenarios which are not necessarily setting specific.

Setting specificity is determined by the unit tests included in the scenario, and other details (such as pediatric vs. geriatric) are determined by the test data provided.

Documents developed for each test scenario include, but are not limited to, a test scenario diagram outlining the form of test scenarios, test scenario procedures (TSP), and test scenario data (TSD). ONC invites public input on those documents.

## SLIDE FIVE: TEST SCENARIO CONCEPTUAL OVERVIEW

The Test Scenario Diagram visually represents how unit tests are linked together to constitute test scenarios. Test scenarios represent only a suggested sequence for testing certification criteria; unit tests can be added, removed, or rearranged for various reasons.

- For instance, test scenarios can be made setting specific by adding or removing setting-specific unit tests.

Each test scenario evaluates conformance to unit test procedures and ensures that EHR technology has the ability to automatically use test data already stored in the EHR from one unit test procedure to the next.

## SLIDE SIX: CLINICALLY PLAUSIBLE WORKFLOW – EHR INTEROPERABILITY: INTAKE

This graphically depicts the clinically plausible work flow (including unit tests, links between and sources of test data, and potential narrative descriptions) for the draft test scenario for EHR Interoperability: Intake.

## SLIDE SEVEN: TEST SCENARIO NARRATIVE – EHR INTEROPERABILITY: INTAKE

This outlines the Test Scenario Narrative which describes the plausible clinical workflow (in both ambulatory and inpatient settings) surrounding the unit tests of the EHR Interoperability: Intake test scenario.

The following ambulatory and inpatient contexts apply to steps 1a – 1c: 170.314(a)(6) Medication list, 170.314(a)(5) Problem list, and 170.314(a)(7) Medication allergy list.

Ambulatory: Patient is seen by Provider. During this ambulatory visit, a medication, medication allergy, and problem list are recorded, changed, and accessed in the Provider's EHR.

Inpatient: Patient is admitted to Hospital. During this hospitalization, a medication, medication allergy, and problem list are recorded, changed, and accessed in the Hospital's EHR.

The following ambulatory and inpatient contexts apply to step 1d: 170.314(b)(1) Transitions of care – receive, display, and incorporate transition of care / referral summaries.

Ambulatory: Patient is referred to Provider upon discharge from Hospital. During transition of care, a referral summary (C-CDA) is received, displayed, and incorporated in the Provider's EHR.

Inpatient: Patient is directly admitted to Hospital from an ambulatory visit with Provider. During transition of care, a referral summary (C-CDA) is received, displayed, and incorporated in the Hospital's EHR.

The following ambulatory / inpatient context applies to step 2: 170.314(b)(4) Clinical information reconciliation. *Test data for medication, medication allergy, and problem list are pulled from the lists stored in the EHR during 1a-1c and from the C-CDAs used in 1(d) to perform this step. Medication, medication allergy and problem list data following Clinical Information Reconciliation can be stored in the EHR after this step is performed.*

Ambulatory/Inpatient: During incorporation of the referral summary (C-CDA), clinical information reconciliation is performed between the medication, medication allergy, and problem list stored in the EHR and those contained in the C-CDA. Upon completion of the clinical information reconciliation, the reconciled medication, medication allergy, and problem list are stored in the EHR.

## SLIDE EIGHT: TEST SCENARIO DIAGRAM: EHR INTEROPERABILITY: INTAKE

This Test Scenario Diagram describes the structure of the EHR Interoperability: Intake Test Scenario. This scenario includes **five unit-based tests**:

- **170.314(a)(6) Medication list**
- **170.314(a)(7) Medication allergy list**
- **170.314(a)(5) Problem list**
- **170.314(b)(1) Transitions of care – receive, display, and incorporate transition of care/ referral summaries**
- **170.314(b)(4) Clinical information reconciliation**

Medication list, medication allergy list, problem list, and transitions of care are unit tests and can be tested in any order. Clinical information reconciliation tests the ability of an EHR to exchange data within itself and must be performed after the other unit tests. The Test Scenario Procedure determines the order in which the testing the exchange of elements between the unit tests is performed.

## SLIDE NINE: SUMMARY

The purpose of scenarios is to make testing clinically plausible, ensure ability to use data, stored within the EHR, across systems and within a single system.

Currently, unit-based testing is implemented with the 2011 and 2014 Edition testing and certification. Unit-based testing consists of individual tests and data.

Scenario-based testing will be implemented in the future and is not required. Scenarios (consists of linked unit-based test procedures in a clinically plausible test flow and test data threaded in a logical fashion) is currently in development.

For more information, visit the 2014 Edition Test Scenarios page on [ONC's website](#). From the 2014 Edition Test Scenarios page, you can access the Draft 2014 Edition Test Scenarios, including the draft test scenario procedure, data, and tools for which [ONC is requesting public input](#), and associated overview documents.

## SLIDE TEN: USEFUL TERMINOLOGY

These are common terms used to describe elements of scenario based testing.