2014 Edition Test Scenarios

January 31, 2013

NOTE: Reference the 2014 Edition Test Scenarios Overview Presentation Companion Narrative for a detailed explanation of the slides.
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Purpose of Scenario-Based Testing

- Make **clinically plausible** (i.e. align with plausible clinical scenarios)
- Ensure ability to use **data across systems**
- Ensure ability to use **data within a system**
- **Increases value** of testing
- **Improve efficiency** of testing
- **Reduce setup** of testing
- Make testing **consistent** and **replicable**
Unit-Based Testing

- Minimum requirement
- Independent tests
- Individual test data (input) and result(s) (output)
- Currently employed for 2011 and 2014 Edition test procedures
- Required for 2011 and 2014 Edition testing and certification
Scenario-Based Testing

- Alternative to unit-based testing
- Dependent tests
- Dependent test data (input) and result(s) (output)
- Can remove individual test from sequence
- Optional for 2014 Edition testing and certification

If test 1 is not applicable…
2014 Edition Test Scenarios - Quick Facts

**Components**
- 2014 Edition Test Method
- Consistent and threaded data

**Scope**
- Focused
- Clinically plausible workflow

**Specificity**
- Not setting or test data specific
- Setting determined by unit test (i.e. add/remove tests depending on setting)
- Scenario details determined by patient test data (e.g. pediatric vs. geriatric)

**Documentation**
- Test scenario diagram
- Test scenario procedure (contains the test scenario narrative)
- Test scenario data
Test Scenario Conceptual Overview

Test Scenario Diagram visually represents the “linking” of Unit Tests

- Scenarios represent a suggested sequence for testing criteria
- In a scenario, unit tests can be added, removed, or rearranged for various reasons, depending on the scenario
  - For instance, a scenario can be made setting specific by adding or removing setting specific tests (e.g. choose 4a or 4b depending on setting)

1. Test Criterion
   - Data added by criterion
2. Test Criterion
   - Data added by criterion
3. Test Criterion
   - Data added by criterion
4a. Test Criterion
   - Data added by criterion
4b. Test Criterion
   - Data added by criterion
7a. Test Criterion
   - Data added by criterion
7b. Test Criterion
   - Data added by criterion

XX Both settings
XX Inpatient setting
XX Ambulatory setting

- Tests unit test procedure
- Tests ability to automatically use data already stored in the EHR
- Indicates the items tested including procedure and data tests

5, 6, 7

1, 2, 3, 4, 5, 6, and 7

1, 2, 3, 5 and 6

1, 2 and 5
Clinically Plausible Workflow – EHR Interoperability: Intake

Start

1a – 1c

During visit, med, med allergy, and problem list are recorded, changed, and accessed in the EHR

1d

(b)(1) TOC – receive, display, and incorporate
During transition of care, a referral summary (C-CDA) is received, displayed, and incorporated in the receiving EHR

2

(b)(4) Clinical Information Reconciliation
During incorporation of the C-CDA, CIR is performed between the med, med allergy, and problem list stored in the EHR and those contained in the C-CDA

Physician’s or Hospital’s EHR

End

Patient is seen by Provider (ambulatory) or admitted to Hospital (inpatient)

Patient is referred to Provider upon discharge (ambulatory) or directly admitted to Hospital from Provider (inpatient)
**Test Scenario Narrative – EHR Interoperability: Intake**

1a – 1c

(a)(6) Medication list, (a)(7) Medication allergy list, (a)(5) Problem 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.

2

(b)(4) Clinical information reconciliation

**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.

1d

(b)(1) Transitions of care – receive, display, and incorporate

**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.
Test Scenario Diagram – EHR Interoperability: Intake

1a. (a)(6) Med list
   1) Med list

1b. (a)(7) Med allergy list
   1) Med allergy list
   5) Med allergy list (reconciled)

1c. (a)(5) Problem list
   1) Problem list

2. Med list (EHR)

(b)(4) Clinical Info Reconciliation
   1) Med list (C-CDA)
   2) Med allergy list (C-CDA)
   3) Problem list (C-CDA)

3. Med list (reconciled)

4. Problem list (EHR)

(b)(1) TOC – receive, display, incorporate
   1) C-CDA

Notes:
- 1a-1d are unit tests and can be tested in any order
- 2 (clinical info rec) tests intraoperability
- 3-6 order is determined by the TSP

Tests unit test procedure
Tests ability to automatically use data already stored in the EHR
Summary

Purpose of Scenarios
- Make clinically plausibility
- Ensure use of data store in the EHR
- Increase value, efficiency, and consistency of testing

Unit-Based Testing
- Currently implemented (required)
- Individual unit tests and data
- 2011 and 2014 Edition test procedures

Scenario-Based Testing
- Future implementation (optional)
- Linked unit tests and threaded data
- First test scenario – EHR Interoperability: Intake
- Requesting public input
<table>
<thead>
<tr>
<th>Glossary Item</th>
<th>Definition</th>
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<tr>
<td><strong>Unit Test or Unit Test Procedure</strong></td>
<td>A unit test or unit test procedure evaluates the conformance of EHR technology to a single certification criterion</td>
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<td><strong>Unit-Based Testing</strong></td>
<td>Use of unit tests to evaluate the conformance of EHR technology to a certification criterion or criteria</td>
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<tr>
<td><strong>Scenario-Based Testing</strong></td>
<td>Use of test scenarios to evaluate the conformance of EHR technology to a certification criterion or criteria</td>
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<tr>
<td><strong>Test Scenario</strong></td>
<td>Broad term used to describe the “linking” of unit tests to represent a clinically relevant workflow</td>
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<tr>
<td><strong>Test Scenario Diagram</strong></td>
<td>Visual representation of a test scenario to illustrate the “linked” unit tests</td>
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<tr>
<td><strong>Test Scenario Procedure (TSP)</strong></td>
<td>“Linked” unit test procedures/scripts to provide testing instructions specific to a test scenario</td>
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<tr>
<td><strong>Test Scenario Data (TSD)</strong></td>
<td>Data used within the TSP during testing (consistent with all testing, the data is independent of the TSP to allow for multiple test cases)</td>
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<tr>
<td><strong>Test Scenario Narrative</strong></td>
<td>Description of possible sequence of events associated with the clinically plausible workflow represented by the test scenario procedure (this is within the TSP)</td>
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*Typically, a “test procedure,” without a “unit” or “scenario” modifier, refers to a unit test procedure*