Inferno Tech Talk – May 2025

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Inferno Tech Talk Introduction

- Purpose: to provide regularly scheduled updates on the Inferno tool and its implementation of the (g)(10) test procedure

- Typical agenda to include:

  - Announcements about upcoming releases

  - Training on new features

  - Highlight outstanding issues or known problems

  - Open discussion

- Monthly recurrence: 2nd Wednesday at 1PM ET

- This call is being recorded and will be posted on https://inferno.healthit.gov/events/

Content reflects Inferno's implementation of applicable Test Procedure
and does not necessarily reflect ASTP/ONC policy.

Today's Agenda

- (g)(10) Standardized API Test Kit v7.2.2

- New Test Kits

  - Central Cancer Registry Reporting Test Kit

  - Cancer Pathology Data Sharing Test Kit

- Test Kits Updates

- Discussions / Questions

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Inferno (g)(10) Test Kit v7.2.2

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Test Kit Update

- Changes that may result in new failure: 0

- Changes that will not affect score of passing implementations: 1

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ASTP/ONC USCDI v3 Data Element Enforcement Discretion

- [Enforcement Discretion](#)

  - … will not take any enforcement action … where the Health IT Module:

    - Does **not** demonstrate the capability to categorize data on individuals based on either or both of the following data elements:

      - sexual orientation; and

      - gender identity; or

    - **Only** demonstrates the capability to categorize data on individuals for the sex data element in accordance with the following SNOMED CT® codes:

      - 248152002 |Female (finding)|; and

      - 248153007 |Male (finding)|.

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Inferno (g)(10) Test Kit Update (1/3)

- Patient MustSupport Test

For ONC USCDI requirements, each Patient must support the following additional elements:

- Patient.address.period.end or Patient.address.use
- Patient.communication
- Patient.communication.language
- Patient.deceasedDateTime
- Patient.extension:ethnicity
- Patient.extension:genderIdentity
- Patient.extension:race
- Patient.extension:sex
- Patient.extension:tribalAffiliation
- Patient.name.period.end or Patient.name.use
- Patient.name.suffix
- Patient.telecom
- Patient.telecom.system
- Patient.telecom.use
- Patient.telecom.value

V7.2.1

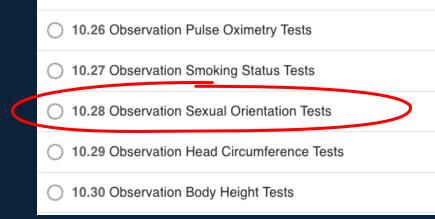For ONC USCDI requirements, each Patient must support the following additional elements:

- Patient.address.period.end or Patient.address.use
- Patient.communication
- Patient.communication.language
- Patient.deceasedDateTime
- Patient.extension:ethnicity
- Patient.extension:race
- Patient.extension:sex
- Patient.extension:tribalAffiliation
- Patient.name.period.end or Patient.name.use
- Patient.name.suffix
- Patient.telecom
- Patient.telecom.system
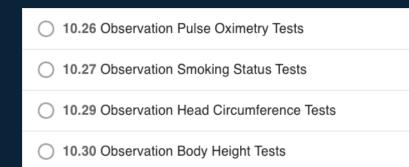- Patient.telecom.use
- Patient.telecom.value

V7.2.2

Inferno (g)(10) Test Kit Update (2/3)

- Observation Sex Orientation Test Group

V7.2.1

V7.2.2

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Inferno (g)(10) Test Kit (3/3)

- Multi-Patient API

7.3.03 Patient resources returned conform to the US Core Patient Profile

| MESSAGES | REQUESTS | INPUTS | OUTPUTS | **ABOUT** |

This test verifies that the resources returned from bulk data export conform to the US Core Patient profile. This includes checking for missing data elements and value set verification.

7.3.16 Observation resources returned conform to the relevant US Core Observation Profile

| MESSAGES | REQUESTS | INPUTS | OUTPUTS | **ABOUT** |

This test verifies that the resources returned from bulk data export conform to the following US Core profiles, based on the category or code associated with the Observation. This includes checking for missing data elements and value set verification.

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New Test Kits

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Central Cancer Registry Reporting Test Kit

Central Cancer Registry Reporting Test Kit

The Central Cancer Registry Reporting (CCRR) Test Kit is a testing tool for Health IT systems seeking to meet the requirements of the STU 1.0.0 version of the HL7® FHIR® Central Cancer Registry Reporting IG.

Updated: 05/13/2025   Version: 0.9.1   Maturity: Low ⑦

Central Cancer Registry Reporting Test Kit

Last Updated: May 13, 2025   *Test Kit Version:* 0.9.1
Maturity: Low ⑦

The Central Cancer Registry Reporting (CCRR) Test Kit is a testing tool for Health IT systems seeking to meet the requirements of the STU 1.0.0 version of the HL7® FHIR® Central Cancer Registry Reporting IG.

This test kit currently contains suites that verify the conformance of systems playing the following roles:

- **Health Data Exchange App (HDEA) Report Generator**: Verifies that the Health IT system can generate conformant and complete reports to send to a cancer registry.
- **Electronic Health Record (EHR) Data Source**: Verifies that the Health IT system can respond to queries for the data needed to create a cancer registry report.

Status

These tests are a **DRAFT** intended to allow CCRR IG implementers

Start Testing

Test Suite

- ⦿ Cancer Registry Reporting Health Data Exchange App (HDEA) Test Suite
- ○ Cancer Registry Reporting Electronic Health Record (EHR) Test Suite

⊕ Create Test Session

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Cancer Registry Reporting Electronic Health Record (EHR) Test Suite

Preset
Inferno Reference Server

☰ EHR Cancer Registry Reporting

⌄ 1 EHR Data Access Group
○ 1.1 Capability Statement
⌄ 1.2 US Core FHIR API
○ 1.2.1 Patient
○ 1.2.2 AllergyIntolerance
○ 1.2.3 CarePlan
○ 1.2.4 CareTeam
○ 1.2.5 Condition
○ 1.2.6 Device
○ 1.2.7 DiagnosticReport for Report and Note Exchange
○ 1.2.8 DiagnosticReport for Laboratory Results Reporting
○ 1.2.9 DocumentReference
○ 1.2.10 Goal
○ 1.2.11 Immunization

Cancer Registry Reporting Electronic Health Record (EHR) Test Suite

▶ RUN ALL TESTS

Overview

The Cancer Registry Reporting EHR Test Suite verifies the conformance of EHRs to the STU 1.0.0 version of the HL7® FHIR® Central Cancer Registry Reporting IG.

Scope

The primary role of an EHR in the Central Cancer Registry Reporting IG workflow is to

> support the APIs as outlined in the EHR Capability Statement for the HDEA [(Health Data Exchange App)] to access patient data.

The requesting HDEA then uses that data to create a report for submission to a cancer registry.

These tests support that role by verifying that the EHR can support the specified APIs and serve up the data needed to create central cancer registry reports that contain the full scope of must support profiles and elements. Per the EHR Capability Statement, this includes FHIR read and search APIs for:

- US Core STU 3.1.1 profiles indicated in the Server CapabilityStatement
- A subset of mCODE profiles, including
  - mCODE Primary Cancer Condition Profile
  - mCODE Secondary Cancer Condition Profile
  - mCODE Cancer Stage Group Profile
  - mCODE TNM Distant Metastases Category Profile
  - mCODE TNM Primary Tumor Category Profile
  - mCODE TNM Regional Nodes Category Profile
  - mCODE Cancer-Related Medication Request Profile

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Cancer Registry Reporting Health Data Exchange App (HDEA) Test Suite

Scope

This test suite focuses on the report creation portion of the HDEA's role in submitting reports to central cancer registries. Specifically, these test verify that the HDEA can generate a set of conformant and complete Central Cancer Registry Reporting Content Bundles.

Other aspects of the HDEAs role as defined in the IG are currently out of scope for this suite, including:

- The use of FHIR APIs to gather instances from an EHR and the use of FHIR Subscriptions to receive notifications from the EHR.
- The use of FHIR APIs to transfer reports to an intermediary or cancer registry using the MedMorph framework.
- The use of MedMorph Knowledge Artifacts.

Test Methodology

To verify that the system under test can produce conformant and complete cancer reports, Inferno asks the tester to provide as input a set of Central Cancer Registry Reporting Content Bundles generated from the system under test. Inferno will check that each Bundle in the input contains a Central Cancer Registry Report Composition and that referenced instances are conformant to the profiles required by the Composition profile. Additionally, to verify completeness the tests check for a populated example of each must support element designated in the Bundle and Composition profiles as well as all profiles specified in must support reference elements on the Composition profile.

Running the tests

Quick Start

The minimal amount of information Inferno needs to run these tests includes the following inputs:

- **Cancer Reports**: A comma-Separated list of one or more FHIR Central Cancer Registry Reporting Content Bundles in JSON format generated by the system under test.

Testers will need to generate one or more reports using the system they are testing, paste them into the input in Inferno and run the tests. Inferno will evaluate the reports and provide test results.

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Cancer Pathology Data Sharing Test Kit

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Test Kit Updates

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Updates for Inferno Test Kits

- Released Da Vinci PAS Test Kit v0.13.1

  - Adds suite options to choose between SMART and UDAP authentication

  - Improves server test to verify adjudication codes

- UDAP Security Test Kit v0.11.4

  - Adds client tests for the UDAP authorization code flow

- SMART App Launch Test Kit v0.6.3

  - Adds client tests for the SMART App Launch flow

- Various other minor improvements to the US Core Test Kit

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Open Discussion / Feedback

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Resources and Contact Information

- https://inferno.healthit.gov/

  - General materials & live demonstration server

- https://inferno-framework.github.io

  - Create your own Inferno Test Kits!

- https://github.com/onc-healthit/onc-certification-g10-test-kit/

  - ONC Certification tests repository, downloads, issues

  - "Watch" repository to receive alerts (new releases, etc)

  - Note: this repository is specific to ONC Certification testing

- inferno@groups.mitre.org (or rscanlon@mitre.org)

- FHIR Zulip Chat: https://chat.fhir.org/#narrow/stream/179309-inferno

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Upcoming Meetings

- Next Inferno Tech Talk: Wednesday June 11 at 1 PM ET

- Please reach out with questions & issues

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