

Inferno Tech Talk – June 2024

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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 ONC policy.

Today's Agenda

- (g)(10) Standardized API Test Kit v5.4.1
- Observation Screening and Assessment Patch
- HTI-1 Update
- DaVinci Test Kits
- Discussions / Questions

ONC (g)(10) Standardized API Test Kit v5.4.1

- Test Update:
 - Changes that may result in new failure: 0
 - Changes that will not affect score of passing implementations: 2

(g)(10) Updates: FHIR Primitive Extension Support

- We had fix in v5.4.0 to support FHIR Primitive Extension
- We assumed that a FHIR Primitive value shall have either value or extension but not both. This was based on “incorrect” interpretation of FHIR invariant “ele-1”

id	Level	Location	Description	Expression
ele-1	Rule	(base)	All FHIR elements must have a @value or children	<code>hasValue() or (children().count() > id.count())</code>

- New fix is applied which allows FHIR Primitive value to have either a value, an extension, or both

(g)(10) Updates: Missing agent.who element

- We assumed Provenance.agent.who always exists.

Element	Cardinality	Type	Description
Slices for agent	1..*	BackboneElement	Actor involved Slice: Unordered, Open by pattern:type provenance-1: onBehalfOf SHALL be present when Provenance.agent.who is a Practitioner or Device Content/Rules for all slices
agent:All Slices			
type	0..1	CodeableConcept	How the agent participated Binding: US Core Provenance Participant Type Codes (extensible)
who	1..1	Reference(US Core Organization Profile US Core Practitioner Profile US Core Patient Profile US Core PractitionerRole Profile US Core RelatedPerson Profile Device)	Who participated
onBehalfOf	0..1	Reference(US Core Organization Profile)	Who the agent is representing

- Additional validation "onBehalfOf SHALL be present when Provenance.agent.who is a Practitioner or Device" fails when agent.who is missing
- Fix: Added a safe guard around agent.who

US Core v6.1.0 Patch Approved

- US Core Patch Process
- FHIR-45319 was approved as US Core v6.1.0 patch
- Observation Screening and Assessment SHALL support these categories:
 - "sdoh"
 - "functional-status"
 - "cognitive-status"
 - "disability-status"
- Condition Problem and Health Concerns SHALL support this category:
 - "sdoh"

US Core v6.1.0

✓ 2.49 Screening Assessments Guidance

▶ RUN TESTS

The Screening Assessments Guidance Sequence tests Condition and Observation resources associated with the provided patient. The resources returned will be checked for consistency against the [US Core Screening And Assessments Guidance](#) and FHIR JIRA ticket [FHIR-45319](#)

In this set of tests, Inferno serves as a FHIR client that attempts to access the different types of Screening and Assessments specified in the guidance. The provided patient needs to have the following four common Screening and Assessments as Observation categories:

- SDOH Assessment (sdoh)
- Functional Status (functional-status)
- Disability Status (disability-status)
- Mental/Cognitive Status (cognitive-status)

The provided patient also needs to have the following common Screening and Assessment as Condition category:

- SDOH Assessment (sdoh)

✓ 2.49.01 Server demonstrates support for the required Condition and Observation categories.



Will add to (g)(10) Test Kit after CCG update.

HTI-1 Test Procedure Update 1/4

- AUT-PAT-25: [Both] The health IT developer demonstrates the ability of the “.well-known/smart-configuration” path to support at least the following as detailed in the implementation specification adopted in § 170.215(c)(2):
 - “capabilities” including support for “launch-ehr”, “launch-standalone”, “**authorize-post**”, “client-public”, “**client-confidential-symmetric**”, “client-confidential-asymmetric”, “sso-openid-connect”, “context-banner”, “context-style”, “context-ehr-patient”, “context-standalone-patient”, “permission-offline”, “permission-patient”, “permission-user”, “authorize-post”, “**permission-v1**”, “permission-v2”;

HTI-1 Test Procedure Update 2/4

- AUT-PAT-28: [Both] The health IT developer demonstrates the ability of the Health IT Module to support the receipt of the following scopes and capabilities according to the implementation specification adopted in § 170.215(c)(2) and standard adopted in § 170.215(e)(1):
 - **SMART v1 scope syntax for patient-level and user-level scopes to support the “permission-v1” “SMART on FHIR® Capability”**
 - SMART v2 scope syntax for patient-level and user-level scopes to support the “permission-v2” “SMART on FHIR® Capability”, **including support for finer-grained resource constraints using search parameters according to section 3.0.2.3 of the implementation specification at § 170.215(c)(2) for the “category” parameter for the following resources: (1) Condition resource with Condition sub-resources Encounter Diagnosis, Problem List, and Health Concern; and (2) Observation resource with Observation sub-resources Clinical Test, Laboratory, Social History, SDOH, Survey, and Vital Signs**

HTI-1 Test Procedure Update 3/4

- "AUT-PAT-30: [Both] The health IT developer demonstrates the ability of the Health IT Module to receive the following access token request parameters from an application according to the implementation specification adopted in § 170.215(c)(2):
 - **Authentication JSON Web Token (to support “client-confidential-asymmetric” “SMART on FHIR® Capability”)**

HTI-1 Test Procedure Update 4/4

- TOK-INTRO-1: The health IT developer demonstrates the ability of the Health IT Module to receive and validate a token it has issued **in accordance with an implementation specification in § 170.215(c)**.

HTI-1 Timeline

- (g)(10) Certification Test Kit Update: End of August 2024
- HTI-1 is required by December 31, 2025

Inferno DaVinci Test Kit

- DaVinci Burden Reduction:
 - Inferno DaVinci PAS Test Kit
 - Inferno DaVinci CRD Test Kit
 - Inferno DaVinci DTR Test Kit
- Da Vinci Payer Data
 - Inferno DaVinci PDEX Test Kit
 - Inferno DaVinci Plan Net Test Kit
 - Inferno DaVinci US Drug Formulary Test Kit

[Da Vinci Payer Data Exchange \(PDex\) Test Kit](#)

The Da Vinci Payer Data Exchange (PDex) Test Kit validates the conformance of PDex server implementations to [version 2.0.0 of the Da Vinci PDex Implementation Guide](#).

Updated: 06/07/2024 Version: 0.9.2 Maturity: Low [?](#)

[Da Vinci Prior Authorization Support \(PAS\) Test Kit](#)

The Da Vinci Prior Authorization Support (PAS) Test Kit validates the conformance of both PAS client and server implementations to [version 2.0.1 of the Da Vinci PAS Implementation Guide](#).

Updated: 06/07/2024 Version: 0.9.3 Maturity: Low [?](#)

[Da Vinci Documentation Templates and Rules \(DTR\) Test Kit](#)

The Da Vinci Documentation Templates and Rules (DTR) Test Kit validates the conformance of DTR client implementations, SMART App and Full EHR, and payer servers to [version 2.0.1 of the Da Vinci DTR Implementation Guide](#).

Updated: 06/07/2024 Version: 0.9.0 Maturity: Low [?](#)

[Da Vinci Coverage Requirements Discovery \(CRD\) Test Kit](#)

The Da Vinci Coverage Requirements Discovery (CRD) Test Kit tests the conformance of client and server systems to [version 2.0.1 of the Da Vinci Coverage Requirements Discovery \(CRD\) Implementation Guide](#).

Updated: 06/07/2024 Version: 0.9.0 Maturity: Low [?](#)

Open Discussion / Feedback

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>

Upcoming Meetings

- Next Inferno Tech Talk: **Wednesday July 10** at 1 PM ET
- Please reach out with questions & issues