

2020-01 US Core

Submitting WG/Project/Implementer Group



Justification and Objectives

The *US Core Implementation Guide version 3.1.0* which is based on FHIR R4 is the basis for further testing and guidance by the Argonaut Project Team. The guide will retain the US Core artifacts and names and provide additional content and guidance specific to Data Query Access for purpose of ONC Certification testing of the servers for conformance to the profiles and be capable of responding to all of the "supported searches" specified in the US Core Implementation Guide Server CapabilityStatement.

Track Leads:

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Expected participants:

- **Elkhan Yusubov** (NewWave)

Link to informal poll for your intent to participate:

For this Connectathon we are using the official [Conman](#) tool to signup if you are participating

(See the [Sprint Tracker!](#) spreadsheet for participants in the 2019 September Connectathon.)

Contact Name	Email	Organization	Role(Server/Client)	Notes (urls, credentials, etc)
		Inferno	Client	https://inferno.healthit.gov/inferno/
FHIR Reference implementations		various	Server	See list at https://wiki.hl7.org/Publicly_Available_FHIR_Servers_for_testing

Track Orientation



Chat

We will use the Argonaut stream in Zulip for communication before, during, and after the connectathon: <https://chat.fhir.org/#narrow/stream/179175-argonaut>

System Roles

The following actors are part of the US Core IG:

- US Core Requestor: An application that initiates a data access request to retrieve patient data. This can be thought of as the client in a client-server interaction.
- US Core Responder: A product that responds to the data access request providing patient data. This can be thought of as the server in a client-server interaction.

Preconditions

Please review the [US Core Implementation Guide](#) for the supported ArgoR4/US Core profiles, and searches as well as the extensive guidance surrounding each set of queries and profile usage.

See the [Conman](#) for [signup information and participant details and endpoint access instructions](#)

Scenarios

Test the servers for conformance to the ArgoR4/US Core profiles response to all of the “supported searches” documented in the "Quick Start" sections and specified in the Argonaut Data Query Implementation Guide Server CapabilityStatement for these profiles:

- [US Core AllergyIntolerance Profile](#)
 - [US Core CarePlan Profile](#)
 - [US Core CareTeam Profile](#)
 - [US Core Condition Profile](#)
 - [US Core DiagnosticReport Profile for Laboratory Results Reporting](#)
 - [US Core DiagnosticReport Profile for Report and Note exchange](#)
 - [US Core DocumentReference Profile](#)
 - [US Core Encounter Profile](#)
 - [US Core Goal Profile](#)
 - [US Core Immunization Profile](#)
 - [US Core Implantable Device Profile](#)
 - [US Core Laboratory Result Observation Profile](#)
 - [US Core Location Profile](#)
 - [US Core Medication Profile](#)
 - [US Core MedicationRequest Profile](#)
 - [US Core Organization Profile](#)
 - [US Core Patient Profile](#)
 - [US Core Pediatric BMI for Age Observation Profile](#)
 - [US Core Pediatric Weight for Height Observation Profile](#)
 - [US Core Practitioner Profile](#)
 - [US Core PractitionerRole Profile](#)
 - [US Core Procedure Profile](#)
 - [US Core Provenance Profile](#)
 - [US Core Pulse Oximetry Profile](#)
 - [US Core Smoking Status Observation Profile](#)
- In addition US Core uses the [Vital Signs Profile](#) from the FHIR Specification. The expanded US Core [Vital Signs Quick Start](#) section provides guidance on vital signs search.

For Example in [US Core AllergyIntolerance Quick Start](#):

3.5.1.4 Quick Start

Below is an overview of the required set of RESTful FHIR interactions - for example, search and read operations - for this profile. See the [Conformance requirements](#) for a complete list of supported RESTful interactions for this IG.

- See the [General Guidance](#) section for additional rules and expectations when a server requires status parameters.
- See the [General Guidance](#) section for additional guidance on searching for multiple patients.

3.5.1.4.1 Mandatory Search Parameters:

The following search parameters and search parameter combinations SHALL be supported.:

1. **SHALL** support searching for all allergies for a patient using the `patient` search parameter:

```
GET [base]/AllergyIntolerance?patient=[reference]
```

Example:

```
1. GET [base]/AllergyIntolerance?patient=1137192
```

Implementation Notes: Fetches a bundle of all AllergyIntolerance resources for the specified patient ([how to search by reference](#).)

3.5.1.4.2 Optional Search Parameters:

The following search parameter combinations SHOULD be supported.:

1. **SHOULD** support searching using the combination of the `patient` and `clinical-status` search parameters:

```
GET [base]/AllergyIntolerance?patient=[reference]&clinical-status=[system]||[code]
```

Example:

```
1. GET [base]/AllergyIntolerance?patient=[id]&clinical-status=http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical|active
```

Implementation Notes: Fetches a bundle of all AllergyIntolerance resources for the specified patient and status code. This will not return any "entered in error" resources because of the conditional presence of the clinicalStatus element. ([how to search by reference](#).) and [how to search by token](#).)

... and the corresponding CapabilityStatement:

7.1.1.2.1 AllergyIntolerance

Supported Profiles: [US Core AllergyIntolerance Profile](#)

Reference Policy: [resolves](#)

Profile Interaction Summary:

- **SHALL** support [search-type](#), [read](#).
- **SHOULD** support [vread](#), [history-instance](#).
- **MAY** support [create](#), [update](#), [patch](#), [delete](#), [history-type](#).

Fetch and Search Criteria:

- A Server **SHALL** be capable of returning a AllergyIntolerance resource using:
`GET [base]/AllergyIntolerance/{id}`
- A Server **SHALL** be capable of supporting the following `_revinclude`:
`Provenance:target - GET [base]/AllergyIntolerance?[parameter=value]&_revinclude=Provenance:target`

Search Parameter Summary:

Conformance	Parameter	Type	Example
MAY	clinical-status	token	<code>GET [base]/AllergyIntolerance?clinical-status=[system] [code]</code>
SHALL	patient	reference	<code>GET [base]/AllergyIntolerance?patient=[patient]</code>

Search Parameter Combination Summary:

Conformance	Parameter Combination	Types	Example
SHOULD	patient+clinical-status	reference+token	<code>GET [base]/AllergyIntolerance?patient=[patient]&clinical-status=[system] [code]</code>

Success Criteria:

1. Demonstrate Conformance to the latest US Core profiles
2. Successfully retrieve clinical data for a single patient using the US Core profiles with the "SHALL support" searches specified in the US Core IG Quick Start Section.
 - a. Including retrieval of clinical notes as described in the [Clinical Notes Guidance Page](#)
 - b. Including retrieval of Medication List as described in the [Medication List Guidance Page](#)
3. Successfully retrieve data provenance in addition to the clinical data for a single patient using the included US Core Provenance artifacts with the "SHALL support" searches specified in the [Argo R4 IG Provenance Quick Start section](#).
4. Successfully retrieve a "on demand" CCD document for a single patient using the [\\$docref operation](#) specified in the US Core IG.

Bonus point:

1. Successfully retrieve US Core artifacts using the defined as "SHOULD support" searches specified in the US Core IG for a single patient.
2. Additional pilot Testing of UDI elements - Since the January ballot of 2019 in cooperations with the FDA, US Core include all the component parts of UDI in [US Core Implantable Device profile](#).
3. Very little guidance is provided on writing and updating data in the context of US Core profiles. There are multiple issues that will need to be considered when defining expected behavior by the various actors to support updates and writes to the data including: Currently the IG defines write for only Clinical notes as described in the [Clinical Notes Guidance Page](#) and the CapabilityStatement.

TestScripts



(here is the link: <https://inferno.healthit.gov/inferno/>)

▶ Run in Postman

(here is the link: <https://www.getpostman.com/collections/26da0121ec41d5c98d98> or check out this Postman Published Collection on public server: <https://documenter.getpostman.com/view/1447203/SVmsTzP4>)

- Every Query
- Set up environment and patient Id and you are good to go (Note that this collection is a Work in Progress since the last Connectathon and not be fully functional 😞)



Test Data

- sample synthetic data that is conformant to US Core R4
- See the Synthea documentation for details!

Security and Privacy Considerations

Refer to individual Server implementation details in the [Sprint Tracker!](#) Spreadsheet.

Report Out

2020-01 US Core

Participants

- Track Leads:
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Postman Collection connected with Cerner Sandbox.

- planning to maintain the Collection and share.
- add Visualizer

Inferno

- Tested with Epic - update for easier connecting
 - Still requiring status
 - number of validation issues that tracking down
- Identified issue using HL7 terminology validator (didn't have IDC9 loaded)
- Reported problem with it flagging unrecognized extensions
- Do we need to have tests to see dataAbsentReason (DAR) used at least once?
 - Considering At least the must supports
- Discuss whether should limit MR profile: with intent = 'order' to be computable.

Next steps:

- Follow up for trackers to HI7 to add "unknown" concept to the following Base FHIR resources.
 - - AllergyIntolerance.clinicalStatus
 - - Condition.clinicalStatus
 - - DocumentReference.status
 - - Immunization.status
 - - Goal.lifecycleStatus
- Technical Corrections to US Core
 - On [CapabilityStatement Server page](#) remove Provenance requirement from Medication, Location, Practitioner, PractitionerRole, and Organization
 - In USCDI Table = change 'MedicationStatement' change to 'MedicationRequest' Remove MedicationStatement on [guidance](#) page.
 - Clarify that Location/PractitionerRole are not being referenced by other resources intentionally as part of a tracker item.
 - Fix bullet 2 in [medication list guidance](#) to clarify in intent = 'order' (should be sub-bulleted)
 - Add Write to [DocRef QuickStart](#) (removed from 3.1.0 in editing error)
 - Add explicit SHALL support search with status if status required to the guidance on the [For Servers Requiring Status](#)
 - Clarify text in [clinical notes guidance](#) on 'minimum required' to reference only the DocRef. and that the DiagnosticReport codes are strongly suggested but not required as id defined in the profile's bindings.
- Discuss strategy and timing of a technical correction timeline vis a vis the rule announcements. road map TBD
- Strategy on expansion of US Core