Amazing Charts

§170.315(G)(10) FHIR API

Documentation

Version 12.4
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Amazing Charts 12.4 API FHIR Documentation.docx

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Introduction:

This document describers the Integration with the SMART App Launch Framework via FHIR allows a third-party application to connect with Provider(s) using the Amazing Charts Software and retrieve Electronic Health Record data from those Providers.

This API collection for use of Health IT developers seeking to use our ONC 2015 Edition Cures Update Certified (g)(10) Standardized API for Health Level 7 (HL7®) Fast Healthcare Interoperability Resources (FHIR®) services.

These applications can launch from inside or outside the user interface of Amazing Charts. The framework supports Apps for use by clinicians, patients, and others via a Patient Portal or any FHIR system where a user can give permissions to launch an App. It provides a reliable, secure authorization protocol for a variety of App architectures, including Apps that run on an end-user's device as well as Apps that run on a secure server.

This documentation is intended for use by third-party application developers which will describe registration, syntax, functionality and errors/exceptions they will see when using the FHIR API to integrate with provider(s) using the Amazing Charts software

Registration

Developers wishing to integrate with the API must contact the PHI Provider that uses Amazing Charts as their EMR. Amazing Charts is an On-Prem EMR solution and as such, each API instance is separate based on the Provider (each Provider is considered a separate entity and will have their own API URL, registration for which third-party developers have access to their data via the FHIR API on their system, and each Provider is responsible for maintaining the rights of API accounts). Once a Provider decides to grant access to you as a third-party developer, they will set up a new developer account with access to the API based on the needs of the developer and agreed upon permissions with the Provider.

Configurations

The following are configuration settings that a third-party developer App needs to meet:

1. The App MUST read and parse JSON responses.
2. The App MUST assure that sensitive information (authentication secrets, authorization codes, tokens) are transmitted ONLY to authenticated servers, over TLS-secured channels. §170.315(g)(10) requires secure connection using TLS version 1.2 or higher.
3. If the App is a Bulk Export application, the application MAY need to be setup to handle longer lasting connections based on the data that is being exported.
4. The App MUST send requests over HTTPS. HTTP requests will be rejected.

It is published on the endpoint: https://hag-fhir.amazingcharts.com/ac/endpoints

API Resources:

API Resource response can be requested in JSON or XML format.
FHIR standard R4

Authentication:

Authorization and access to the API is authenticated used OAuth 2.0 protocols. Registered end-users can request an authorization grant and exchange the granted code for an access token. Proof Key for Code Exchange (PKCE) is required to obtain granted authorization codes and access tokens. For more information on PKCE please refer to IETF RFC 7636.

The App Launch support the following scopes standard.
App Launch: Scopes and Launch Context - SMART App Launch v2.2.0

Registration

Third parties and end-users may only register for Developer accounts through the client/practice they represent. See Terms and Conditions for more information.

Authorization Grant

Registered end-users can request an authorization grant using the following request.

Request:

```
GET https://ac-fhir-stg.amazingcharts.com/fhir/authorize
```

Request Parameters

Name	Type	Required	Description
response_type	string	required	Fixed value: 'code'
client_id	string	required	Registered Client ID
state	string	required	Value used to maintain state between request and response
redirect_uri	string	required	Must match a pre-registered URI established during registration
scope	string	required	Level of access being requested in a comma separated list
aud	string	required	URL of the resource server being requested
code_challenge	string	required	Parameter generated by application for PKCE code challenge
code_challenge_method	string	required	Fixed value: 'S256'

Response Parameters

Name	Type	Description
code	string	Granted authorization code
state	string	Exact value sent in the authorization request

Available Scopes

All patient scopes have read and search available (.rs)

openid	patient/Encounter.rs	patient/Organization.rs
patient/Medication.rs	patient/Goal.rs	patient/Patient.rs
patient/AllergyIntolerance.rs	patient/Immunization.rs	patient/Practitioner.rs
patient/CarePlan.rs	patient/Location.rs	patient/Procedure.rs
patient/CareTeam.rs	patient/MedicationRequest.rs	patient/Provenance.rs
patient/DiagnosticReport.rs	patient/Observation.rs	patient/PractitionerRole.rs
patient/DocumentReference.rs	patient/Encounter.rs	patient/Organization.rs

Access Token

Using granted authorization code, it may be exchanged for an access token with the following request.

Request

```
POST https://api.qrshs.com/fhir/token
```

Request Headers

Name	Type	Required	Description
Authorization	Basic	required	Using given client ID and client secret

Request Parameters

Name	Type	Required	Description
grant_type	string	required	Fixed value: 'refresh_token'
refresh_token	string	required	Refresh token from the previous access token request

Response Parameters

Same parameters as Access Token returns.

Request Structure

The basic request structure is formatted as the following:

```
GET [base]/[resource]/[parameters]
```

- The base is the API URL https://ac-fhir-stg.amazingcharts.com /fhir
- The resource is the FHIR resource name, such as Patient or Observation
- The parameters are the id and search criteria, such as id=04222022 or name=Barbara

Request Headers

Name	Type	Required	Description
Authorization	Bearer	required	Access token from authentication

ALLERGIES AND INTOLERANCES US CORE ALLERGYINTOLERANCE PROFILE-

US Core AllergyIntolerance Profile

USCore Data Element	FHIR Resource Field
Substance(Drug class)	AllergyIntolerance.code(Snomed CT)
Substance(Medication)	AllergyIntolerance.code (RxNorm)
Reaction	AllergyIntolerance.reaction

Allergy Intolerance

For an example JSON response for Allergy Intolerance, please see the following: AllergyIntolerance.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/AllergyIntolerance
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific AllergyIntolerance record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/AllergyIntolerance/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/AllergyIntolerance?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
clinical-status	Token	GET [base]/AllergyIntolerance?clinical-status=active
patient	Reference	GET [base]/AllergyIntolerance?patient=1

Search Parameter Combination Summary:

Parameter Combination	Types	Example
patient+clinical-status	reference+token	GET [base]/AllergyIntolerance?patient=1&clinical-status=active

ASSESSMENT AND PLAN OF TREATMENT - US CORE CAREPLAN PROFILE

US Core CarePlan Profile

USCore Data Element	FHIR Resource Data
narrative summary	CarePlan.text
status	CarePlan.status (like draft
intent	CarePlan.intent (like proposal
category	CarePlan.category
patient	CarePlan.subject

Care Plan
For an example JSON response for Care Plan, please see the following: CarePlan.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/CarePlan
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific CarePlan record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/CarePlan/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/CarePlan?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
category	token	GET [base]/CarePlan?category=assess-plan
patient	reference	GET [base]/CarePlan?patient=1

Search Parameter Combination Summary:

Parameter Combination	Types	Example
patient+category	reference+token	GET [base]/CarePlan?patient=1&category=assess-plan

CARETEAM US CORE CARETEAM PROFILE

US Core CareTeam Profile

USCore Data Element	FHIR Resource Data
patient	CareTeam.subject
participant role	CareTeam.participant[i].role (where i is the index of participant)
careteam member name	CareTeam.participant[i].member.name (where i is the index of participant)
careteam member identifier	CareTeam.participant[i].member.identifier
careteam member location	CareTeam.managingOrganization
careteam member telecom	CareTeam.telecom

Care Team
For an example JSON response for Care Team, please see the following: CareTeam.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/CareTeam
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific CareTeam record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/CareTeam/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/CareTeam?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
status	token	GET [base]/CareTeam?status=active
patient	reference	GET [base]/CareTeam?patient=1

Search Parameter Combination Summary:

Parameter Combination	Types	Example
patient+status	reference+token	GET [base]/CareTeam?patient=1&status=active

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/CareTeam?status=active,inactive

CLINICAL NOTES - US CORE DOCUMENTREFERENCE

US Core DocumentReference

- FHIR Resource: DocumentReference
  - *Consultation Note*
  - *Discharge Summary Note*
  - *History & Physical*
  - *Progress Note*
- FHIR Resource: DocumentReference, DiagnosticReport
  - *Imaging Narrative*
  - *Laboratory Report Narrative*
  - *Pathology Report Narrative*
  - *Procedure Note*

USCore Data Element	FHIR Resource Data
status	documentReference.status
document category	documentReference.category
code	documentReference.type
patient	documentReference.subject
MIME type	documentReference.content.Typeformat
document URL	documentReference.content.attachment

Document Type	LOINC Code
Consultation Note	11488-4
History & Physical	34117-2
Procedure Note	28570-0
Progress Note	11506-3

Document Reference
This resource supports the Common Clinical Notes.

For an example JSON response, please see the following: DocumentReference.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/DocumentReference
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific DocumentReference record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/DocumentReference/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the “_revinclude” information with any request using the following:

```
GET
https://FHIR_URL/DocumentReference?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
_id	token	GET [base]/DocumentReference?_id=1
category (Consult Note)	token	GET [base]/DocumentReference?category=11488-4
category (History & Physical)	token	GET [base]/DocumentReference?category=34117-2
category (Progress Note)	token	GET [base]/DocumentReference?category=11506-3
category (Procedure Note)	token	GET [base]/DocumentReference?category=28570-0

Search Parameter Combination Summary:

Parameter Combination	Example
patient+category+date	GET [base]/DocumentReference?patient=1&category=34117-2&date=2015-06-22

patient	reference	GET [base]/DocumentReference?patient=1
type	token	GET [base]/DocumentReference?type=34117-2
date	date	GET [base]/DocumentReference?date=2015-06-22

COVERAGE US CORE COVERAGE PROFILE (NOT DONE)

US Core CareTeam Profile

USCore Data Element	FHIR Resource Data
patient	CareTeam.subject
participant role	CareTeam.participant[i].role (where i is the index of participant)
careteam member name	CareTeam.participant[i].member.name (where i is the index of participant)
careteam member identifier	CareTeam.participant[i].member.identifier
careteam member location	CareTeam.managingOrganization
careteam member telecom	CareTeam.telecom

Mandatory and Must Support Data Elements

The following data elements must always be present (Mandatory definition) or must be supported if the data is present in the sending system (Must Support definition). They are presented below in a simple human-readable explanation. Profile-specific guidance and examples are provided as well. The Formal Views below provides the formal summary, definitions, and terminology requirements.

Each Coverage Must Have:

health insurance member identifier or subscriber id
a status
the health insurance beneficiary (patient)
beneficiary's relationship to the subscriber
the health insurance issuer (payer)

Each Coverage Must Support:

health insurance coverage type (e.g., Medicare)
coverage start and/or end date
health insurance group and/or plan

Profile Specific Implementation Guidance:

Coverage.status alone may not indicate whether an individual is covered. The Coverage.period needs to be considered as well. For example, the coverage may be expired with a status of "active", or conversely, it may be "canceled" but still have covered claims.

The hierarchical nature of the Coverage.type code system "Payer" (also known as the US Public Health Data Consortium Source of Payment Codes) may be unclear in the expansion, and some of the codes may be inappropriate for the use case. Implementers should refer to the PHDSC Payer Type Committee User's Guide for the Source of Payment Typology when selecting codes.

If Insurers issue unique member Ids for dependents, then the *memberId* Coverage.identifier should be used instead of Coverage.dependent to to uniquely refer to the dependent with respect to their insurance.

Usage:

Examples for this Resource Profile: Coverage/coverage-example

Care Team

For an example JSON response for Care Team, please see the following: CareTeam.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/CareTeam
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific CareTeam record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/CareTeam/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the “_revinclude” information with any request using the following:

```
GET
https://FHIR_URL/CareTeam?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
status	token	GET [base]/CareTeam?status=active
patient	reference	GET [base]/CareTeam?patient=1

Search Parameter Combination Summary:

Parameter Combination	Types	Example
patient+status	reference+token	GET [base]/CareTeam?patient=1&status=active

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/CareTeam?status=active,inactive

ENCOUNTER US CORE ENCOUNTER PROFILE

US Core Encounter Profile

USCore Data Element	FHIR Resource Data
status	Encounter.status
classification	Encounter.class
type	Encounter.type
patient	Encounter.subject

Encounter
For an example JSON response for Encounter, please see the following: Encounter.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Encounter
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Encounter record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Encounter/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET  https://FHIR_URL/Encounter?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
_id	token	GET [base]/Encounter?_id=1
patient	reference	GET [base]/Encounter?patient=1

GOALS - US CORE GOAL PROFILE

US Core Goal Profile

USCore Data Element	FHIR Resource Data
status	Goal.achievementStatus
goal description	Goal.description
patient	Goal.subject

Additional SDOH Goals.

When the most recent encounter is signed, the system sends the SDOH goals to the FHIR server via the exported CCDA file through the FHIR server liquid templates.

Each SDOH Goal Has:
1. a status
2. description of the goal
3. a patient

Each SDOH Goal Supports:
1. start date*
2. target date(s)*

Goal
For an example JSON response for Goal, please see the following: Goal.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Goal
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Goal record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Goal/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the “_revinclude” information with any request using the following:

GET https://FHIR_URL/Goal?[parameter=value]&_revinclude=Provenance:target Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu

Parameter	Type	Example
patient	reference	GET [base]/Goal?patient=1

HEALTH CONCERNS - US CORE CONDITION PROFILE

US Core Condition Profile

USCore Data Element	FHIR Resource Data
status	Condition.status
category	Condition.category (like health concerns, problems, and encounter diagnoses).
code	Condition.code (ICD-10-CM/Snomed)
patient	Condition.subject

Additional Health Concerns via CCDA and Liquid Templates

When the most recent encounter is signed, the system sends the SDOH goals to the FHIR server via the exported CCDA file through the FHIR server liquid templates.

Each Condition Has:

1. a category code of “problem-list-item” or “health-concern”
2. a code that identifies the condition*
3. a patient

Each Condition Supports:

1. a timestamp when the resource last changed*
2. a clinical status of the condition (e.g., active or resolved)
3. a verification status
4. additional health status/assessment categories
5. a date of diagnosis*
6. abatement date (in other words, date of resolution or remission)
7. a date when recorded*

Condition
For an example JSON response for Condition, please see the following: Condition.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Condition
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Condition record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Condition/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET     https://FHIR_URL/Condition?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
patient	Reference	GET [base]/Condition?patient=1

IMMUNIZATIONS - US CORE IMMUNIZATION PROFILE

US Core Immunization Profile

USCore Data Element	FHIR Resource Data
status	immunization.status
vaccine code	immunization.vaccineCode
date	immunization.occurence
patient	immunization.patient

For an example JSON response for Immunization, please see the following: Immunization.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Immunization
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Immunization record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Immunization/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET https://FHIR_URL/Immunization?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
patient	reference	GET [base]/Immunization?patient=1

LABORATORY - US CORE LABORATORY RESULT OBSERVATION PROFILE & US CORE DIAGNOSTICREPORT

US Core Laboratory Result Observation Profile & US Core DiagnosticReport Profile for Laboratory Results Reporting.

Laboratory Result Observation

USCore Data Element	FHIR Resource Data
status	Observation.status
category	Observation.category
LOINC code	Observation.code
patient	Observation.subject

DiagnosticReport For Laboratory :

USCore Data Element	FHIR Resource Data
status	DiagnosticReport.status
category	DiagnosticReport.category
code	DiagnosticReport.code
patient	DiagnosticReport.subject
time	DiagnosticReport.issued
reported time	DiagnosticReport.effective

Diagnostic Report
This Resource covers Radiology, Laboratory Result Reporting.

For an example JSON response for a Laboratory Result, please see the following: Laboratory.

You can retrieve a specific DiagnosticReport record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/DiagnosticReport/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the “_revinclude” information with any request using the following:

GET https://FHIR_URL/DiagnosticReport?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu

Search Parameter Summary:

Parameter	Type	Example
category (Radiology)	token	GET [base]/DiagnosticReport?category=LP29684-5
category (Laboratory Result)	token	GET [base]/DiagnosticReport?category=LAB
patient	reference	GET [base]/DiagnosticReport?patient=1
code (Radiology)	token	GET [base]/DiagnosticReport?code=LP29684-5
date	date	GET [base]/DiagnosticReport?date=2015-06-22T00:00:00.00%2B00:00

Search Parameter Combination Summary:

Parameter Combination	Example
patient+category+date	GET [base]/DiagnosticReport?patient=1&category=LAB&date=2015-06-22
patient+code+date	GET [base]/DiagnosticReport?patient=1&code=LP29684-5&date=2015-06-22
patient+code	GET [base]/DiagnosticReport?patient=1&code=LP29684-5
patient+category	GET [base]/DiagnosticReport?patient=1&category=LAB

MEDICATIONS - US CORE MEDICATION PROFILE, US CORE MEDICATIONREQUEST PROFILE, US CORE ALLERGYINTOLERANCE PROFILE, MEDICATION DISPENSE

US Core Medication Profile
US Core MedicationRequest Profile,
US Core MedicationDispense Profile

USCore Data Element	FHIR Resource Data
status	medicationRequest.status
intent code	medicationRequest.intent
medication	medicationRequest.medication
patient	medicationRequest.subject
date when written	medicationRequest.authoredOn
prescriber	medicationRequest.requester

Medication
For an example JSON response for Medication please see the following: Medication.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Medication
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Location record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Medication/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

This resource does not support any parameters and can only be called directly.

Medication Request
For an example JSON response, please see the following: MedicationRequest.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/MedicationRequest
        Authorization: Bearer ewar8wrama.ajkew23
```

You can retrieve a specific MedicationRequest record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/MedicationRequest/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the “_include” information with any request using the following:

```
GET
https://FHIR_URL/MedicationRequest?[parameter=value]&_include=MedicationRequest:medi
cation
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the “_revinclude” information with any request using the following:

```
GET
https://FHIR_URL/MedicationRequest?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
status	token	GET [base]/MedicationRequest?status=active
intent	token	GET [base]/MedicationRequest?intent=filler-order
patient	reference	GET [base]/MedicationRequest?patient=1

Search Parameter Combination Summary:

Parameter Combination	Example

patient+intent+status	GET [base]/MedicationRequest?patient=1&intent=filler-order&status=active

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/MedicationRequest?status=active,stopped
intent	token	GET [base]/MedicationRequest?intent=filler-order,instance-order

MedicationDispense:

USCore Data Element	FHIR Resource Data
MedicationDispense.identifier	"identifier": [{ "system": "http://amazingcharts.com/pat-medication-order-id", "value": "85894073", "assigner": { "display": "Harris Amazing Charts" } }]
MedicationDispense.status	"status": "completed"
MedicationDispense.medication[x]	"medicationCodeableConcept": { "coding": [{ "system": "http://www.nlm.nih.gov/research/umls/rxnorm", "code": "12345", "display": "Medication Name" }], "text": "Medication Name" }
MedicationDispense.subject	"subject": { "reference": "Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f", "display": "Patient Name" }
MedicationDispense.context	"context": { "reference": "Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65" }
MedicationDispense.performer	"performer": [{ "actor": { "reference": "Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed", "display": "Provider Name" } }]
MedicationDispense.authorizingPrescription	"authorizingPrescription": [{ "reference": "MedicationRequest/12345", "display": "Medication Description" }]
MedicationDispense.type	"type": { "coding": [{ "system": "http://terminology.hl7.org/CodeSystem/v3-ActCode", "code": "FFC", "display": "First Fill - Complete" }] }
MedicationDispense.quantity	"quantity": { "value": 30, "unit": "tablets", "system": "http://ncimeta.nci.nih.gov", "code": "TAB" }
MedicationDispense.daysSupply	"daysSupply": { "value": 30, "unit": "days", "system": "http://unitsofmeasure.org", "code": "d" }
MedicationDispense.whenHandedOver	"whenHandedOver": "2024-01-15"
MedicationDispense.dosageInstruction	"dosageInstruction": [{ "text": "Take 1 tablet twice daily", "timing": { "repeat": { "frequency": 2, "period": 1, "periodUnit": "d" } }, "doseAndRate": [{ "doseQuantity": { "value": 1, "unit": "tablet", "system": "http://ncimeta.nci.nih.gov", "code": "TAB" } }] }]

MedicationDispense.dosageInstruction.text	"text": "Take 1 tablet twice daily"
MedicationDispense.dosageInstruction.timing	"timing": { "repeat": { "frequency": 2, "period": 1, "periodUnit": "d" } }
MedicationDispense.dosageInstruction.doseAndRate	"doseAndRate": [{ "doseQuantity": { "value": 1, "unit": "tablet", "system": "http://ncimeta.nci.nih.gov", "code": "TAB" } }]

MedicationDispense

For an example JSON response for Specimen, please see the following: MedicationDispense.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/MedicationDispense
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Specimen record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/MedicationDispense/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/  MedicationDispense?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	API
_id	token	GET [base]/MedicationDispense?_id=dispense-123
_lastUpdated	date	GET [base]/MedicationDispense?_lastUpdated=2024-01-01
_profile	uri	GET [base]/MedicationDispense?_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-medicationdispense
_security	token	GET [base]/MedicationDispense?_security=http://terminology.hl7.org/CodeSystem/v3-ActReason|HTEST
_tag	token	GET [base]/MedicationDispense?_tag=http://example.org/codes|medication-dispense
code	token	GET [base]/MedicationDispense?code=http://www.nlm.nih.gov/research/umls/rxnorm|12345
context	reference	GET [base]/MedicationDispense?context=Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65
destination	reference	GET [base]/MedicationDispense?destination=Location/pharmacy-location
identifier	token	GET [base]/MedicationDispense?identifier=http://amazingcharts.com/pat-medication-order-id|85894073
medication	reference	GET [base]/MedicationDispense?medication=Medication/medication-123
patient	reference	GET [base]/MedicationDispense?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
performer	reference	GET [base]/MedicationDispense?performer=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed
prescription	reference	GET [base]/MedicationDispense?prescription=MedicationRequest/med-request-123
receiver	reference	GET [base]/MedicationDispense?receiver=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
responsibleparty	reference	GET [base]/MedicationDispense?responsibleparty=Practitioner/prescriber-123

status	token	GET [base]/MedicationDispense?status=completed
subject	reference	GET [base]/MedicationDispense?subject=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
type	token	GET [base]/MedicationDispense?type=http://terminology.hl7.org/CodeSystem/v3-ActCode|FFC
whenhandedover	date	GET [base]/MedicationDispense?whenhandedover=2024-01-15
whenprepared	date	GET [base]/MedicationDispense?whenprepared=2024-01-15

Search Parameter Combination Summary:

Parameter	Type	API
Patient & Status	composite	GET [base]/MedicationDispense?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f&status=completed
Medication & Patient	composite	GET [base]/MedicationDispense?medication=Medication/med-123&patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
Performer & Date Range	composite	GET [base]/MedicationDispense?performer=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed&whenhandedover=ge2024-01-01&whenhandedover=le2024-12-31
Prescription Reference	reference	GET [base]/MedicationDispense?prescription=MedicationRequest/med-request-123
Date Range	date	GET [base]/MedicationDispense?whenhandedover=ge2024-01-01&whenhandedover=le2024-12-31
Context & Status	composite	GET [base]/MedicationDispense?context=Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65&status=completed

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/ MedicationDispense?status=active,inactive

OBSERVATION - US CORE OBSERVATION PROFILE

US Core Simple Observation Profile

The following data elements must always be present (Mandatory definition) or must be supported if the data is present in the sending system (Must Support definition). They are presented below in a simple human-readable explanation. Profile specific guidance and examples are provided as well. The Formal Views below provides the formal summary, definitions, and terminology requirements.

Each Observation Must Have:

1. a status
2. a category code
3. a code
4. a patient

Each Observation Must Support:

1. a time indicating when the observation was made
2. who answered the questions
3. a value

Additional USCDI Requirements:

This Additional USCDI Requirements element is not Mandatory or Must Support but is required for ONC Health IT certification testing and is included in the formal definition of the profile and the Observation examples.

1. references to an associated survey	2. assessment	3. or screening tool*

*see guidance below

Profile Specific Implementation Guidance:

- The codes can be from LOINC or SNOMED CT.
- The value for these types of observations may be:
  - a string
  - a code
  - a "qualifier" confirming or refuting a statement about findings in code. For example: **code**: Transport too expensive (SNOMED CT: 160695008)
    value: true
- The Observation.category element provides an efficient way of restricting search on observations to a given context such as sdoh, functional-status, or social history observations. Example searches are shown in the Quick Start section below. However, clients need to understand that data categorization is somewhat subjective. The categorization applied by the source may not align with the client's expectations. Clients may find it more useful to use queries based on a specific code or set of codes or to perform additional client-side filtering of query results.
- See the Screening and Assessments guidance page for how this profile can represent "clinical judgments".
  - *Observations formally part of an assessment tool or survey **SHOULD** use the US Core Observation Screening Assessment Profile. However, an assertion or determination derived from screening and assessment tools **SHOULD** reference them using Observation.derivedFrom.
- *As documented here, when using `Observation.derivedFrom' to reference an Observation, the referenced Observation **SHOULD** be a US Core Observation.
  - Although none of the Observation.derivedFrom references are flagged as *Must Support*, the server **SHALL** support at least one of them.

Usage:

- Examples for this Resource Profile: Observation/alcohol-use-status, Observation/alcoholic-drinks-per-day, Observation/exercise-per-day, Observation/exercise-per-week, Observation/simple-observation-cognitive-status, Observation/simple-observation-disability-status, Observation/simple-observation-functional-status, Observation/simple-observation-sdoh and Observation/substance-use-status

Mandatory Search Parameters:

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

1. **SHALL** support searching using the combination of the **patient** and **category** search parameters:

GET [base]/Observation?patient={Type/}[id]&category=http://terminology.hl7.org/CodeSystem/observation-category|laboratory

Example:

GET https://FHIR_URL /Observation?patient=1134281&category=social-history

Implementation Notes: Fetches a bundle of all Observation resources for the specified patient and a category code = laboratory (how to search by reference and how to search by token)

2. SHALL support searching using the combination of the patient and code search parameters:
   - including optional support for *OR* search on code (e.g.code={system|}[code],{system|}[code],...)

GET [base]/Observation?patient={Type/}[id]&code={system|}[code]{,{system|}[code],...}

Example:

GET https://FHIR_URL /Observation?patient=1134281&code=http://loinc.org|

Implementation Notes: Fetches a bundle of all Observation resources for the specified patient and observation code(s). SHOULD support search by multiple report codes. The Observation code parameter searches `Observation.code only. (how to search by reference and how to search by token)

3. SHALL support searching using the combination of the patient and category and date search parameters:
   - including support for these date comparators: gt,lt,ge,le
   - including optional support for *AND* search on date (e.g.date=[date]&date=[date]]&...)

GET https://FHIR_URL /Observation?patient={Type/}[id]&category=http://terminology.hl7.org/CodeSystem/observation-category|laboratory&date={gt|lt|ge|le}[date]{&date={gt|lt|ge|le}[date]&...}

Example:

GET [base]Observation?patient=555580&category=social-history&date=ge2018-03-14T00:00:00Z

Implementation Notes: Fetches a bundle of all Observation resources for the specified patient and date and a category code = laboratory (how to search by reference and how to search by token and how to search by date)

Pregnancy Status

When sending pregnancy status. The following LOINC Code is used:

The overall observation for pregnancy status is represented by a single LOINC code:

- 82810-3: Pregnancy status

LOINC Answer Codes

Required FHIR Elements for CUBS

System sends data to the FHIR server and includes CUBS disability status

1. Resource Type:
   Observation
2. Status:
   Observation.status → usually "final" for completed assessments.
3. Category:
   Observation.category → use "functional-status" (from ObservationCategory codes).

4. Code:
   Observation.code → LOINC code for CUBS or functional status.
   - Example: {"coding":[{"system":"http://loinc.org","code":"LL5052-7","display":"CUBS Disability Status"}]}
5. Subject:
   Observation.subject → Reference to the Patient.
6. Effective Date/Time:
   Observation.effectiveDateTime → When the assessment was performed.
7. Value:
   Observation.valueCodeableConcept → The actual CUBS status using LA codes.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Observation
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Immunization record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Observation/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET https://FHIR_URL/Observation?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Diagnostic Report:

US Core DiagnosticReport Profile for Laboratory Results Reporting Profile
US Core DiagnosticReport Profile for Report and Note Exchange
US Core Observation Clinical Result Profile

USCore Data Element	FHIR Resource Data
DiagnosticReport.identifier	"identifier": [{ "system": "http://amazingcharts.com/pat-lab-result-id", "value": "85894073", "assigner": { "display": "Harris Amazing Charts" } }]
DiagnosticReport.status	"status": "final"
DiagnosticReport.category	"category": [{ "coding": [{ "system": "http://terminology.hl7.org/CodeSystem/v2-0074", "code": "LAB", "display": "Laboratory" }], "text": "Laboratory" }]
DiagnosticReport.code	"code": { "coding": [{ "system": "http://loinc.org", "code": "33747-0", "display": "General chemistry studies" }], "text": "Lab Panel Description" }

DiagnosticReport.subject	"subject": { "reference": "Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f", "display": "Patient Name" }
DiagnosticReport.encounter	"encounter": { "reference": "Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65" }
DiagnosticReport.effective[x]	"effectiveDateTime": "2024-01-15T10:30:00Z"
DiagnosticReport.issued	"issued": "2024-01-15T10:30:00-05:00"
DiagnosticReport.performer	"performer": [{ "reference": "Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed", "display": "Provider Name" }]
DiagnosticReport.result	"result": [{ "reference": "Observation/observation-123" }]
DiagnosticReport.meta.profile	"meta": { "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab"] }

For an example JSON response for Gender Identity, please see the following:
DiagnosticReport Lab Result
DiagnosticReport Profile for Report and Note Exchange
DiagnosticReport Observation Clinical Result

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/StructureDefinition
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Gender Identity record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/StructureDefinition/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/StructureDefinition?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

US Core DiagnosticReport and Observation Search Parameters:

Parameter	Type	Example
_id	token	GET [base]/DiagnosticReport?_id=report-123
_lastUpdated	date	GET [base]/DiagnosticReport?_lastUpdated=2024-01-01
_profile	uri	GET [base]/DiagnosticReport?_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab
_security	token	GET [base]/DiagnosticReport?_security=http://terminology.hl7.org/CodeSystem/v3-ActReason|HTEST
_tag	token	GET [base]/DiagnosticReport?_tag=http://example.org/codes|lab-report
based-on	reference	GET [base]/DiagnosticReport?based-on=ServiceRequest/lab-order-123

category	token	GET [base]/DiagnosticReport?category=http://terminology.hl7.org/CodeSystem/v2-0074|LAB
code	token	GET [base]/DiagnosticReport?code=http://loinc.org|33747-0
conclusion	token	GET [base]/DiagnosticReport?conclusion=normal
date	date	GET [base]/DiagnosticReport?date=2024-01-15
encounter	reference	GET [base]/DiagnosticReport?encounter=Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65
identifier	token	GET [base]/DiagnosticReport?identifier=http://amazingcharts.com/pat-lab-result-id|85894073
issued	date	GET [base]/DiagnosticReport?issued=2024-01-15
media	reference	GET [base]/DiagnosticReport?media=Media/image-123
patient	reference	GET [base]/DiagnosticReport?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
performer	reference	GET [base]/DiagnosticReport?performer=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed
result	reference	GET [base]/DiagnosticReport?result=Observation/observation-123
results-interpreter	reference	GET [base]/DiagnosticReport?results-interpreter=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed
specimen	reference	GET [base]/DiagnosticReport?specimen=Specimen/specimen-123
status	token	GET [base]/DiagnosticReport?status=final
subject	reference	GET [base]/DiagnosticReport?subject=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f

Observation Clinical Results Search Parameters:

Parameter	Type	API
_id	token	GET [base]/Observation?_id=observation-123
_lastUpdated	date	GET [base]/Observation?_lastUpdated=2024-01-01
_profile	uri	GET [base]/Observation?_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-observation-clinical-result
based-on	reference	GET [base]/Observation?based-on=ServiceRequest/lab-order-123
category	token	GET [base]/Observation?category=http://terminology.hl7.org/CodeSystem/observation-category|laboratory
code	token	GET [base]/Observation?code=http://loinc.org|33747-0
code-value-concept	composite	GET [base]/Observation?code-value-concept=http://loinc.org|33747-0$http://snomed.info/sct|260385009
code-value-date	composite	GET [base]/Observation?code-value-date=http://loinc.org|33747-0$2024-01-15
code-value-quantity	composite	GET [base]/Observation?code-value-quantity=http://loinc.org|33747-0$7.2|g/dL
code-value-string	composite	GET [base]/Observation?code-value-string=http://loinc.org|33747-0$positive
combo-code	token	GET [base]/Observation?combo-code=http://loinc.org|33747-0
combo-data-absent-reason	token	GET [base]/Observation?combo-data-absent-reason=unknown
combo-value-concept	token	GET [base]/Observation?combo-value-concept=http://snomed.info/sct|260385009

combo-value-quantity	quantity	GET [base]/Observation?combo-value-quantity=7.2|g/dL
component-code	token	GET [base]/Observation?component-code=http://loinc.org|8480-6
component-code-value-concept	composite	GET [base]/Observation?component-code-value-concept=http://loinc.org|8480-6$http://snomed.info/sct|260385009
component-code-value-quantity	composite	GET [base]/Observation?component-code-value-quantity=http://loinc.org|8480-6$120|mm[Hg]
component-data-absent-reason	token	GET [base]/Observation?component-data-absent-reason=unknown
component-value-concept	token	GET [base]/Observation?component-value-concept=http://snomed.info/sct|260385009
component-value-quantity	quantity	GET [base]/Observation?component-value-quantity=120|mm[Hg]
data-absent-reason	token	GET [base]/Observation?data-absent-reason=unknown
date	date	GET [base]/Observation?date=2024-01-15
derived-from	reference	GET [base]/Observation?derived-from=Observation/parent-obs-123
device	reference	GET [base]/Observation?device=Device/device-123
encounter	reference	GET [base]/Observation?encounter=Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65
focus	reference	GET [base]/Observation?focus=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
has-member	reference	GET [base]/Observation?has-member=Observation/member-obs-123
identifier	token	GET [base]/Observation?identifier=http://amazingcharts.com/clinical-note-medcin-id|71303239
method	token	GET [base]/Observation?method=http://snomed.info/sct|272391002
part-of	reference	GET [base]/Observation?part-of=Procedure/procedure-123
patient	reference	GET [base]/Observation?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
performer	reference	GET [base]/Observation?performer=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed
specimen	reference	GET [base]/Observation?specimen=Specimen/specimen-123
status	token	GET [base]/Observation?status=final
subject	reference	GET [base]/Observation?subject=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
value-concept	token	GET [base]/Observation?value-concept=http://snomed.info/sct|260385009
value-date	date	GET [base]/Observation?value-date=2024-01-15
value-quantity	quantity	GET [base]/Observation?value-quantity=7.2|g/dL
value-string	string	GET [base]/Observation?value-string=positive

Search Parameter Combination Summary:

Parameter	Type	Example
Lab Results by Patient	composite	GET [base]/DiagnosticReport?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f&category=LAB&status=final
Radiology Reports	composite	GET [base]/DiagnosticReport?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f&category=RAD&status=final
Lab Results by Date Range	composite	GET [base]/DiagnosticReport?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f&date=ge2024-01-01&date=le2024-12-31
Observations by Code	composite	GET [base]/Observation?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f&code=http://loinc.org|33747-0
Vital Signs	composite	GET [base]/Observation?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f&category=vital-signs
Lab Values with Units	composite	GET [base]/Observation?code=http://loinc.org|33747-0&value-quantity=gt6.0|g/dL

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/StructureDefinition?status=active,inactive

PATIENT DEMOGRAPHICS - US CORE PATIENT PROFILE

US Core Patient Profile

USCore Data Element	FHIR Resource Data
First Name Middle Name	Patient.name.given
Last Name	Patient.name.family
Previous Name	Patient.name
Suffix	Patient.name.suffix
US Core Birth Sex Extension	Patient.extension.BirthSex
Date of Birth	Patient.birthDate
US Core Race Extension	Patient.extension.race
US Core Extension Ethnicity	Patient.extension.ethnicity
Preferred Language	Patient.communication
Address	Patient.address
Phone Number	Patient.telecom

Patient
For an example JSON response for Patient, please see the following: Patient.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Patient
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Patient record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Patient/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET  https://FHIR_URL/Patient?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
_id	token	GET [base]/Patient?_id=1
birthdate	date	GET [base]/Patient?birthdate=1970-05-01
family	string	GET [base]/Patient?family=Smith
gender	token	GET [base]/Patient?gender=Male
identifier	token	GET [base]/Patient?identifier=1
name	string	GET [base]/Patient?name=Dan

Search Parameter Combination Summary:

Parameter Combination	Types	Example
birthdate+family	date+string	GET [base]/Patient?birthdate=1970-05-01&family=Smith
family+gender	string+token	GET [base]/Patient?family=Smith&gender=Male

birthdate+name	date+string	GET [base]/Patient?birthdate=1970-05-01&name=Dan

gender+name	token+string	GET [base]/Patient?gender=male&name=Dan

PROBLEMS - US CORE CONDITION PROFILE

US Core Condition Profile

USCore Data Element	FHIR Resource Data
Status	Condition.status
Category	Condition.category (like health concerns, problems, and encounter diagnoses).
Code	Condition.code (ICD-10-CM/Snomed)
Patient	Condition.subject

Condition
For an example JSON response for Condition, please see the following: Condition.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Condition
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Condition record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Condition/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET     https://FHIR_URL/Condition?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
patient	reference	GET [base]/Condition?patient=1

PROCEDURES - US CORE PROCEDURE PROFILE

US Core Procedure Profile

USCore Data Element	FHIR Resource Data
Status	Procedure.status
procedure code	Procedure.code
Patient	Procedure.subject
procedure performed date	Procedure.performed

Additional SDOH Procedure

When the most recent encounter is signed, the system sends the SDOH goals to the FHIR server via the exported CCDA file through the FHIR server liquid templates.

Each Procedure Has:

1.	a status
2.	a code that identifies the type of procedure performed on the patient*
3.	a patient
4.	when the procedure was performed*

Each Procedure Supports:

1.	the encounter associated with the procedure

Procedure
For an example JSON response for Procedure, please see the following: Procedure.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Procedure
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Procedure record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Procedure/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET https://FHIR_URL/Procedure?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
patient	reference	GET [base]/Procedure?patient=1
date	date	GET [base]/Procedure?date=2015-06-22T00:00:00.00+00:00

Search Parameter Combination Summary:

Parameter Combination	Types	Example
patient+date	reference+date	GET [base]/Procedure?patient=1&date=2015-06-22

PROVENANCE - US CORE PROVENANCE PROFILE

US Core Provenance Profile

USCore Data Element	FHIR Resource Data
resources that Provenance is supporting	Provenance.target
date and time	Provenance.occurred
author organization	Provenance.agent.OnBehalfOf

Provenance

For an example JSON response for Provenance please see the following: AllergyIntolerance + Provenance Bundle. This is an Allergy Intolerance response with the Provenance attached at the end (in response to a _revincludes parameter).

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Provenance
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Provenance record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Provenance/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

This resource does not support any parameters and can only be called directly.

QUESTIONNAIRERESPONSE - US CORE DOCUMENTREFERENCE

In addition to the Mandatory and Must Support data elements in the SDC QuestionnaireResponse Profile, the following data-elements must always be present (Mandatory definition]) or must be supported if the data is present in the sending system (Must Support definition). They are presented below in a simple human-readable explanation. Profile specific guidance and examples are provided as well. The Formal Views below provides the formal summary, definitions, and terminology requirements. Note that the *Key Elements Table* view aggregates all the Must Support elements between this profile and its parent profiles.

Each QuestionnaireResponse Must Have:

- a reference back to the assessment upon which it is based

a status
a patient
the date the answers were gathered

Each QuestionnaireResponse Must Support:

a practitioner who recorded the answers
the questions and decimal, string, and coded type answers
each question must have a identifier the pointing to question

Profile Specific Implementation Guidance:

*The SDC profile (from which this profile is derived) focuses on the constraints appropriate to capturing the "answer(s)" to a FHIR Questionnaire and demands that the Questionnaire's canonical URL be specified. If the QuestionnaireResponse is based on a non-FHIR form:

Construct a FHIR Questionnaire which represents *at least* the relevant metadata (in other words, the actual questions may be omitted).

Communicates the identifier of the non-FHIR form instead of the canonical URI using the US Core Extension Questionnaire URI extension.

See the Screening and Assessments guidance page for how this profile or alternatively Observations can be used represent SDOH assessments.

QuestionnaireResponse can be searched using the standard FHIR RESTful API search parameters. Example searches are shown in the Quick Start section below. Although search chains through the associated Questionnaire can be used to query QuestionnaireResponse by item, individual responses are not directly searchable in QuestionnaireResponse. In order to search directly for individual responses, they must be "parsed" into a searchable form - i.e. to a local FHIR or non-FHIR data store such as a database or FHIR Observations.

The basic workflow for the creation, discovery and retrieval and data-extraction of FHIR Questionnaire and QuestionnaireResponse is thoroughly documented in the Structured Data Capture (SDC) implementation guide.

Usage:

Refer to this Resource Profile: US Core Observation Screening Assessment Profile and US Core Simple Observation Profile

Examples for this Resource Profile: QuestionnaireResponse/glascow-coma-score, QuestionnaireResponse/hunger-vital-sign-example, QuestionnaireResponse/phq-9-example and QuestionnaireResponse/prapare-example

Example is at:

https://hl7.org/fhir/us/core/STU6.1/QuestionnaireResponse-hunger-vital-sign-example.html

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/QuestionaireResponse
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific DocumentReference record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/QuestionaireResponse/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/QuestionaireResponse?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

US CORE OBSERVATION PROFILE

US Core Observation Profile

USCore Data Element	FHIR Resource Data
Status	Observation.status
Code	Observation.code
Patient	Observation.subject
smoking status recorded date	Observation.effective
Value	Observation.value

Observation

This Resource covers Smoking Status, Pediatric Weight for Height, Laboratory Result, Pediatric BMI for Age, Pulse Oximetry and Pediatric Head Occipital-frontal Percentile.

For an example JSON response for Smoking Status, please see the following: Smoking Status.

For an example JSON response for Pediatric Weight for Height please see the following: Pediatric Weight for Height.

For an example JSON response for Laboratory Result, please see the following: Laboratory Result.

For an example JSON response for Pediatric BMI for Age, please see the following: Pediatric BMI for Age.

For an example JSON response for Pulse Oximetry please see the following: Pulse Oximetry.

For an example JSON response for Pediatric Head Occipital-frontal Percentile please see the following: Pediatric Head Occipital-frontal Percentile.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Observation
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Observation record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Observation/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the “_revinclude” information with any request using the following:

```
GET https://FHIR_URL/Observation?[parameter=value]&_revinclude=Provenance:target
```

Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu

---

Search Parameter Summary:

Parameter	Type	Example
category (laboratory)	token	GET [base]/Observation?category=laboratory
category (vital-signs)	token	GET [base]/Observation?category=vital-signs
patient	reference	GET [base]/Observation?patient=1
code (Smoking Status)	token	GET [base]/Observation?code=72116-2
code (Weight for Height)	token	GET [base]/Observation?code=77606-2
code (BMI)	token	GET [base]/Observation?code=59576-9
code (Pulse Oximetry)	token	GET [base]/Observation?code=2708-6
code (Pulse Oximetry)	token	GET [base]/Observation?code=59408-5
code (Body Height)	token	GET [base]/Observation?code=8302-2
code (Temperature)	token	GET [base]/Observation?code=8310-5
code (Blood Pressure)	token	GET [base]/Observation?code=85354-9
code (Body Weight)	token	GET [base]/Observation?code=29463-7
code (Head Occipital)	token	GET [base]/Observation?code=8289-1
code (Heart Rate)	token	GET [base]/Observation?code=8867-4
code (Respiratory Rate)	token	GET [base]/Observation?code=9279-1
date	Date	GET [base]/Observation?date=2015-06-22

Search Parameter Combination Summary:

Parameter Combination	Example
patient+code	GET [base]/Observation?patient=1&code=8867-4
patient+category	GET [base]/Observation?patient=1&category=laboratory

UNIQUE DEVICE IDENTIFIER(S) FOR PATIENT'S IMPLANTABLE DEVICE(S) - US CORE IMPLANTABLEDEVICE PROFILE

US Core ImplantableDevice Profile

USCore Data Element	FHIR Resource Data
code	Device.type
patient	Device.patient
UDI (optional)	Device.udiCarrier.deviceIdentifier
manufacture date(optional)	Device.manufactureDate
expiration date (optional)	Device.expirationDate
lot number (optional)	Device.lotNumber
serial number (optional)	Device.serialNumber

Device (Implantable Device)
For an example JSON response for Implantable Device, please see the following: Device.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Device
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Device record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Device/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET https://FHIR_URL/Device?[parameter=value]&_revinclude=Provenance:target Authorization:
Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
patient	reference	GET [base]/Device?patient=1

LOCATION

USCore Location Profile

USCore Data Element	FHIR Resource Data
name	Location.name

For an example JSON response for Location please see the following: Location.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Location
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Location record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Location/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
name	string	GET [base]/Location?name=Location Name
address	string	GET [base]/Location?address=1234 City Lane

ORGANIZATION USCORE ORGANIZATION PROFILE

USCore Organization Profile

USCore Data Element	FHIR Resource Data
status	Organization.status
name	Organization.name

Organization
For an example JSON response for Organization please see the following: Organization.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Organization
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Organization record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Organization/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
name	string	GET [base]/Organization?name=Agency Name
address	string	GET [base]/Organization?address=1234 City Lane

PRACTITIONER

USCORE PRACTITIONER PROFILE.

USCore Data Element	FHIR Resource Data
Identifier (NPI)	Practitioner.identifier
name	Practitioner.name

Practitioner
For an example JSON response for Practitioner please see the following: Practitioner.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Practitioner
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Practitioner record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Practitioner/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
name	string	GET [base]/Practitioner?name=Sally
identifier	token	GET [base]/Practitioner?identifier=102

Sex – Asked but Declined

When the patient is asked but declines to included sex in the chart. The system included birth sex as UNK in the xml and human readable CCDA document. The UNK value is sent via exported CCDA through the FHIR server liquid templates when the most recent
Encounter is signed.

Tribal Affiliation

Tribal Affiliation is sent via exported CCDA through the FHIR server liquid templates when the most recent Encounter is signed.

Vital Signs – FHIR Core VitalSigns Profile

FHIR Core VitalSigns Profile

Profile Name	LOINC
Vital Signs Panel	85353-1
Respiratory Rate	9279-1
Heart rate	8867-4
Oxygen saturation	2708-6
Body temperature	8310-5
Body height	8302-2
Head circumference	9843-4
Body weight	29463-7
Body mass index	39156-5
Blood pressure systolic and diastolic	85354-9
Systolic blood pressure	8480-6
Diastolic blood pressure	8462-4

This resource is called like the following (with no parameters):

```
GET https://EHR_FHIR/Observation
Authorization: Bearer ewar8wrama.ajkew234924.asdfaiweruehwrwrwhui
```

You can retrieve a specific Observation record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://EHR_FHIR/Observation/1
Authorization: Bearer ewar8wrama.ajkew234924.asdfaiweruehwrwrwhui
```

You can retrieve the “_revinclude” information with any request using the following:

```
GET https://EHR_FHIR/Observation?[parameter=value]&_revinclude=Provenance:target
```

Search Parameter Summary:

Parameter	Type	Example
category (vital-signs)	token	GET [base]/Observation?category=vital-signs

QUERY FOR ALL DATA AS A CCDA DOCUMENT

CCDA documents can be accessed within DocumentReference resources. CCDAs are categorized as "Summary of Episode" Notes with LOINC code 34133-9. For example, to request a CCDA document covering all dates for patient 1234, the query could be formatted as:

```
GET  https://FHIR_URL/DocumentReference?patient=1234&type=http://loinc.org|34133-9
```

QUERY FOR A SPECIFIC DATE OR DATE RANGE

The CCDS data categories or CCDA documents returned by the API may be limited by date by specifying either (1) a specific date or (2) start and/or end dates. These dates can be included as FHIR R4 search parameters as defined at http://hl7.org/fhir/R4/http.html#search. Specifying a date or date range in the request is optional.

For example, to request a CCDA document with date range between 12/12/2022 and 12/15/2022 for patient 1234, the query could be formatted as:

QUESTIONNAIRE US CORE QUESTIONNAIRE PROFILE

US Core CareTeam Profile

USCore Data Element	FHIR Resource Data
patient	CareTeam.subject
participant role	CareTeam.participant[i].role (where i is the index of participant)
careteam member name	CareTeam.participant[i].member.name (where i is the index of participant)
careteam member identifier	CareTeam.participant[i].member.identifier
careteam member location	CareTeam.managingOrganization
careteam member telecom	CareTeam.telecom

Care Team
For an example JSON response for Care Team, please see the following: CareTeam.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/CareTeam
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific CareTeam record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/CareTeam/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/CareTeam?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
status	token	GET [base]/CareTeam?status=active
patient	reference	GET [base]/CareTeam?patient=1

Search Parameter Combination Summary:

Parameter Combination	Types	Example
patient+status	reference+token	GET [base]/CareTeam?patient=1&status=active

Search Composite OR Summary:

Parameter	Types	Example

```
GET https://FHIR_URL/DocumentReference?patient=1234&type=http://loinc.org|34133-9&period=ge2022-12-12&period=le2022-12-15
```

MEDICATIONADMINISTRATION

FHIR R4 MedicationAdministration Profile.

MedicationAdministration
For an example JSON response for MedicationAdministration please see the following: MedicationAdminstration.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/MedicationAdministration
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific MedicationAdministration record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/MedicationAdministration/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

SERVICEREQUEST

FHIR R4 ServiceRequest Profile.

ServiceRequest
For an example JSON response for ServiceRequest please see the following: ServiceRequest.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/ServiceRequest
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific ServiceRequest record "directly" using an ID (like 1, 2, 500, 5000, etc):

US Core Service Request Profile.

US Core Service Request:

USCore Data Element	FHIR Resource Data
ServiceRequest.identifier	"identifier": [{ "system": "http://amazingcharts.com/pat-servicerequest-id", "value": "85894073", "assigner": { "display": "Harris Amazing Charts" } }]
ServiceRequest.status	"status": "active"
ServiceRequest.intent	"intent": "order"
ServiceRequest.category	"category": [{ "coding": [{ "system": "http://snomed.info/sct", "code": "103693007", "display": "Diagnostic procedure" }], "text": "Diagnostic procedure" }]
ServiceRequest.code	"code": { "coding": [{ "system": "http://snomed.info/sct", "code": "306206005", "display": "Referral to service" }], "text": "General referral to a specialist" }
ServiceRequest.subject	"subject": { "reference": "Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f" }
ServiceRequest.encounter	"encounter": { "reference": "Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65" }
ServiceRequest.occurrence[x]	"occurrenceDateTime": "2024-01-15T10:30:00Z"
ServiceRequest.authoredOn	"authoredOn": "2024-01-15T10:30:00Z"
ServiceRequest.requester	"requester": { "reference": "Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed" }
ServiceRequest.performer	"performer": [{ "reference": "Practitioner/dfb1e2da-4891-7fb3-5fb6-57a0a02dfb0c" }]
ServiceRequest.reasonCode	"reasonCode": [{ "coding": [{ "system": "http://snomed.info/sct", "code": "25064002", "display": "Headache" }], "text": "Patient complaint of headache" }]
ServiceRequest.reasonReference	"reasonReference": [{ "reference": "Condition/55e2ac4b-64b3-80bf-82e4-1c4896aacffb" }]

LOGGING

The FHIR server logs when a data is accessed via FHIR API so reports can be generated for ONC.

Access to EHI via technology certified to the "standardized API for patient population services" certification criterion under § 170.315(g)(10) is counted as when an individual had at least one FHIR resource returned during the reporting period.

Number of distinct EHR deployments and, out of that number, how many retrieved at least one FHIR Resource. Number of distinct certified health IT deployments (across clients) associated with at least one FHIR resource returned by US Core Implementation Guide version

APPENDIX: SMART APPLICATIONS AND SCOPES

The following Smart Application non-functional requirement applies "SMART App Launch 2.0.0- FHIR"

Also see: App Launch: Scopes and Launch Context - SMART App Launch v2.2.0

Applies to SMART App Launch 2.0.0 (required by December 31, 2025) and SVAP approved standard SMART App Launch 2.2.0:
For certification purposes, a Health IT Module is not required to support authorization requests nor responses including a combination of SMART v1 and SMART v2 scopes. For example, an authorization request including simultaneously the SMART v1 scope of "patient/Observation.read" and the SMART v2 scope of "patient/Condition.rs" is not required to be supported.
A Health IT Module may optionally support the "fhirContext" launch context parameter defined in the SMART App Launch 2.0.0 implementation guide. If the "fhirContext" parameter is supported, the Health IT Module must conform to the requirements for the parameter detailed in the SMART App Launch implementation guide.
We clarify the following SMART App Launch capabilities must be supported as part of fulfilling the authentication and authorization requirements at §170.315(g)(10)(v)(A) when certifying using the implementation specification at §170.215(c)(2):
To support patient access for standalone apps, the Health IT Module must support:
the capabilities of "launch-standalone" and "context-standalone-patient"; and
the capabilities in subsections "Authorization Methods", "Client Types", "Single Sign-on", and "Permissions" except the "permission-online" and "permission-user" capabilities
To support clinician access for EHR launch, the Health IT Module must support:
the capabilities of "launch-ehr", "context-banner", "context-style", "context-ehr-patient", and "context-ehr-encounter" (if supporting USCDI v2 or v3); and
the capabilities in subsections "Authorization Methods", "Client Types", "Single Sign-on", and "Permissions" except the "permission-online" capability
As finalized in the HTI-1 Final Rule (89 FR 1294), Health IT Modules are required to support SMART App Launch "Finer-grained resource constraints using search parameters" for the "category" parameter for the Condition resource with Condition sub-resources Encounter Diagnosis, Problem List, and Health Concern, and the Observation resource with Observation sub-resources Clinical Test, Laboratory, Social History, SDOH, Survey, and Vital Signs. We defer to the implementation guides referenced at §170.215(b)(1) and §170.215(c) for specific implementation guidance for this requirement. In the context of the

US Core 6.1.0 implementation guide, the Observation sub-resources of Clinical Test and SDOH may have scopes supported as follows:
support for scopes for the Observation sub-resource Clinical Test using the "procedure" code from the US Core Clinical Result Observation Category value set.
support for scopes for the Observation sub-resource SDOH using the "sdoh" code from the US Core Category code system.
The US Core 7.0.0 IG includes requirements for how scopes for the Condition and Observation resources must be supported, including requirements in the "SMART on FHIR Obligations and Capabilities" section as well as Condition and Observation profiles sections.
For certification and testing purposes the Health IT Module must demonstrate support for patients and users to authorize an app to receive patient data using scopes with "Finer-grained resource constraints using search parameters" for the sub-resources specified in the HTI-1 Final Rule. We require a Health IT Module to support a patient's ability to provide authorization at the individual sub-resource scope level.
Although Health IT Modules presented for testing and certification must include the ability for patients to authorize an application to receive their EHI based on individual FHIR resource level and individual sub-resource level scopes, Health IT Modules are not prohibited from presenting authorization scopes in a more user-friendly format (e.g. grouping scopes under categories, renaming the scopes for easier comprehension by the end-user), as long as the ability for patients to authorize applications based on individual resource level and individual sub-resource level scopes is available, if requested by the patient.
As part of supporting the SMART App Launch "permission-v2" capability for the purposes of certification, if an app requests authorization for a resource level scope for the "Condition" or "Observation" resources, then for patient authorization purposes a Health IT Module must support presentation of the required sub-resource scopes to the patient for authorization. Specifically, sub-resource scopes must be presented for patient authorization as follows:
"Condition" sub-resource scopes "Encounter Diagnosis", "Problem List", and "Health Concern" if a "Condition" resource level scope is requested
"Observation" sub-resource scopes "Clinical Test", "Laboratory", "Social History", "SDOH", "Survey", and "Vital Signs" if an "Observation" resource level scope is requested
For purposes of certification to the §170.315(g)(10) criterion, a Health IT Module is not required to support for authorization purposes presentation of sub-resource scopes to the user during clinician access for EHR launch.

ServiceRequest.text	"text": { "status": "generated", "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"> Generated Narrative: ServiceRequest " }
ServiceRequest.meta.profile	"meta": { "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-servicerequest"] }

ServiceRequest

For an example JSON response for Care Team, please see the following: ServiceRequest.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/ServiceRequest
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific RelatedPerson record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/ServiceRequest /1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
_id	token	GET [base]/ServiceRequest?_id=service-request-123
_lastUpdated	date	GET [base]/ServiceRequest?_lastUpdated=2024-01-01
_profile	uri	GET [base]/ServiceRequest?_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-servicerequest
_security	token	GET [base]/ServiceRequest?_security=http://terminology.hl7.org/CodeSystem/v3-ActReason|HTEST
_tag	token	GET [base]/ServiceRequest?_tag=http://example.org/codes|service-request
authored	date	GET [base]/ServiceRequest?authored=2024-01-15
based-on	reference	GET [base]/ServiceRequest?based-on=CarePlan/care-plan-123
body-site	token	GET [base]/ServiceRequest?body-site=http://snomed.info/sct|281158006
category	token	GET [base]/ServiceRequest?category=http://snomed.info/sct|103693007
code	token	GET [base]/ServiceRequest?code=http://snomed.info/sct|306206005
encounter	reference	GET [base]/ServiceRequest?encounter=Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65
identifier	token	GET [base]/ServiceRequest?identifier=http://amazingcharts.com/pat-servicerequest-id|85894073
instantiates-canonical	reference	GET [base]/ServiceRequest?instantiates-canonical=ActivityDefinition/activity-123

instantiates-uri	uri	GET [base]/ServiceRequest?instantiates-uri=http://example.org/protocols/service-protocol
intent	token	GET [base]/ServiceRequest?intent=order
occurrence	date	GET [base]/ServiceRequest?occurrence=2024-01-15
patient	reference	GET [base]/ServiceRequest?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
performer	reference	GET [base]/ServiceRequest?performer=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed
performer-type	token	GET [base]/ServiceRequest?performer-type=http://snomed.info/sct|158965000
priority	token	GET [base]/ServiceRequest?priority=routine
replaces	reference	GET [base]/ServiceRequest?replaces=ServiceRequest/old-request-123
requester	reference	GET [base]/ServiceRequest?requester=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed
requisition	token	GET [base]/ServiceRequest?requisition=http://amazingcharts.com/requisition|REQ-123
specimen	reference	GET [base]/ServiceRequest?specimen=Specimen/specimen-123
status	token	GET [base]/ServiceRequest?status=active
subject	reference	GET [base]/ServiceRequest?subject=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f

Combined Search Examples:

Parameter	Type	Example
Patient & Status	composite	GET [base]/ServiceRequest?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f&status=active
Code & Patient	composite	GET [base]/ServiceRequest?code=http://snomed.info/sct|306206005&patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
Requester & Date Range	composite	GET [base]/ServiceRequest?requester=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed&authored=ge2024-01-01&authored=le2024-12-31
Category & Status	composite	GET [base]/ServiceRequest?category=http://snomed.info/sct|103693007&status=active
Intent & Priority	composite	GET [base]/ServiceRequest?intent=order&priority=urgent
Encounter Context	composite	GET [base]/ServiceRequest?encounter=Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65&status=active

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/StructureDefinition?status=active,inactive

RELATEDPERSON US CORE RELATEDPERSON PROFILE

US Core RelatedPerson Profile

USCore Data Element	FHIR Resource Data
RelatedPerson.active	"active": true
RelatedPerson.patient	"patient": { "reference": "Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f" }
RelatedPerson.relationship	"relationship": [{ "coding": [{ "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode", "code": "MTH", "display": "mother" }], "text": "Mother" }]
RelatedPerson.name	"name": [{ "use": "official", "family": "Smith", "given": ["Jane"] }]
RelatedPerson.telecom	"telecom": [{ "system": "phone", "value": "555-555-1234", "use": "mobile" }]
RelatedPerson.address	"address": [{ "use": "home", "line": ["80A Village Street"], "city": "New Holland", "state": "PA", "postalCode": "17557" }]
RelatedPerson.gender	"gender": "female"
RelatedPerson.birthDate	"birthDate": "1975-05-15" (if available)
RelatedPerson.identifier	"identifier": [{ "system": "http://amazingcharts.com/related-person-entity-id", "value": "87679452", "assigner": { "display": "Harris Amazing Charts" } }]
RelatedPerson.meta.profile	"meta": { "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-relatedperson"] }
RelatedPerson.period	"period": { "start": "2020-01-01" } (if relationship has time bounds)
RelatedPerson.communication	"communication": [{ "language": { "coding": [{ "system": "urn:ietf:bcp:47", "code": "en" }] }, "preferred": true }] (if available)

RelatedPerson
For an example JSON response for Care Team, please see the following: RelatedPerson.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/RelatedPerson
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific RelatedPerson record “directly” using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/ RelatedPerson /1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
active	token	GET [base]/RelatedPerson?status=active
address	string	GET [base]/RelatedPerson?address=1357 Amber Dr
address-city	string	GET [base]/RelatedPerson?address-city=Beaverton
address-country	string	GET [base]/RelatedPerson?address-country=US
address-postalcode	string	GET [base]/RelatedPerson?address-postalcode=97006
address-state	string	GET [base]/RelatedPerson?address-state=OR
address-use	token	GET [base]/RelatedPerson?address-use=billing
birthdate	date	GET [base]/DiagnosticReport?birthdate=2015-06-22T00:00:00.00%2B00:00
email	token	GET [base]/RelatedPerson?email=jane@example.com GET [base]/RelatedPerson?telecom=jane@example.com
gender	token	GET [base]/RelatedPerson?gender=female GET [base]/RelatedPerson?gender=male
identifier	token	GET [base]/CareTeam?identifier=1
name	string	GET [base]/RelatedPerson?given=Jane GET [base]/RelatedPerson?given=Mathew GET [base]/RelatedPerson?given=Kathy
patient	reference	GET [base]/CareTeam?patient=1

phone	token	GET [base]/RelatedPerson?phone=555-555-1234
phonetic	string	GET [base]/DiagnosticReport?date=2015-06-22T00:00:00.00%2B00:00
relationship	token	GET [base]/RelatedPerson?relationship=MTH GET [base]/RelatedPerson?relationship=SPS GET [base]/RelatedPerson?relationship=PGRFTH GET [base]/RelatedPerson?relationship=http://terminology.hl7.org/CodeSystem/v3-RoleCode|MTH
telecom	token	GET [base]/RelatedPerson?telecom=555-555-1234

Search Parameter Combination Summary:

Parameter Combination	Types	Example
patient+status	reference+token	GET [base]/RelatedPerson?patient=1&status=active

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/RelatedPerson?status=active,inactive

GENDER IDENTITY US CORE GENDER IDENTITY PROFILE

US Core Gender Identity Profile

USCore Data Element	FHIR Resource Data
Extension.url	**"url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-genderIdentity"**
Extension.valueCodeableConcept	**"valueCodeableConcept": { "coding": [{ "system": "http://loinc.org", "code": "LA22878-5", "display": "Identifies as female" }], "text": "Identifies as female" }**
Extension.valueCodeableConcept.coding.system	**"system": "http://loinc.org"**
Extension.valueCodeableConcept.coding.code	**"code": "LA22878-5"**
Extension.valueCodeableConcept.coding.display	**"display": "Identifies as female"**

Extension.valueCodeableConcept.text	**"text": "Identifies as female"**

Gender Identity

For an example JSON response for Gender Identity, please see the following: Gender Identity.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/StructureDefinition
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Gender Identity record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/StructureDefinition/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/StructureDefinition?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Supported Gender Identity Values:

Code	System	Display
LA22872-8	http://loinc.org	Additional gender category or other, please specify
LA22873-6	http://loinc.org	Choose not to disclose
LA22874-4	http://loinc.org	Identifies as non-binary
LA22875-1	http://loinc.org	Identifies as male
LA22876-9	http://loinc.org	Transgender female/Trans woman/Male-to-female (MTF)
LA22877-7	http://loinc.org	Transgender male/Trans man/Female-to-male (FTM)
LA22878-5	http://loinc.org	Identifies as female
ASKU	http://terminology.hl7.org/CodeSystem/v3-NullFlavor	Asked but unknown

Search Parameter Summary:

Parameter	Type	Example
url	uri	GET [base]/StructureDefinition?url=http://hl7.org/fhir/us/core/StructureDefinition/us-core-genderIdentity
name	string	GET [base]/StructureDefinition?name=USCoreGenderIdentityExtension
title	string	GET [base]/StructureDefinition?title=US Core Gender Identity Extension
status	token	GET [base]/StructureDefinition?status=active
publisher	string	GET [base]/StructureDefinition?publisher=HL7 International - Cross-Group Projects
version	token	GET [base]/StructureDefinition?version=6.0.0
context-type	token	GET [base]/StructureDefinition?context-type=element
context	token	GET [base]/StructureDefinition?context=Patient
base	reference	GET [base]/StructureDefinition?base=http://hl7.org/fhir/StructureDefinition/Extension
kind	token	GET [base]/StructureDefinition?kind=complex-type
type	uri	GET [base]/StructureDefinition?type=Extension
derivation	token	GET [base]/StructureDefinition?derivation=constraint
experimental	token	GET [base]/StructureDefinition?experimental=false
date	date	GET [base]/StructureDefinition?date=2022-04-20
jurisdiction	token	GET [base]/StructureDefinition?jurisdiction=urn:iso:std:iso:3166|US
identifier	token	GET [base]/StructureDefinition?identifier=http://hl7.org/fhir/us/core/StructureDefinition/us-core-genderIdentity
keyword	token	GET [base]/StructureDefinition?keyword=gender
abstract	token	GET [base]/StructureDefinition?abstract=false

Search Parameter Combination Summary:

Parameter Combination	Types	Example
patient+status	reference+token	GET [base]/StructureDefinition?patient=1&status=active

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/StructureDefinition?status=active,inactive

SPECIMEN US CORE SPECIMEN PROFILE

US Core Specimen Profile

USCore Data Element	FHIR Resource Data
identifier	Specimen.identifier
type	Specimen.type
accessionIdentifier	Specimen.accessionIdentifier
subject	Specimen.subject
collection	Specimen.collection

Specimen
For an example JSON response for Specimen, please see the following: Specimen.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/Specimen
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Specimen record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/Specimen/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/Specimen?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
accession	Token	GET [base]/Speciment?accession=1
bodysite	Token	GET [base]/Speciment?bodysite=1
collected	Date	GET [base]/Specimen?date=2015-06-22T00:00:00.00%2B00:00
collector	Reference	[base]/Specimen?practitioner=1
container	Token	GET [base]/Speciment?container=1
container-id	Token	GET [base]/Speciment?container-id=1
identifier	Token	GET [base]/Speciment?identifier=1
patient	Reference	GET [base]/Specimen?patient=1
status	Token	GET [base]/Specimen?status= active,inactive
subject	reference	GET [base]/Specimen?subject= 1
type	token	GET [base]/Speciment?type=1

Search Parameter Combination Summary:

Parameter Combination	Types	Example
patient+status	reference+token	GET [base]/Speciment?patient=1&status=active

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/Specimen?status=active,inactive

MedicationDispense:

USCore Data Element	FHIR Resource Data
MedicationDispense.identifier	"identifier": [{ "system": "http://amazingcharts.com/pat-medication-order-id", "value": "85894073", "assigner": { "display": "Harris Amazingcharts" } }]
MedicationDispense.status	"status": "completed"
MedicationDispense.medication[x]	"medicationCodeableConcept": { "coding": [{ "system": "http://www.nlm.nih.gov/research/umls/rxnorm", "code": "12345", "display": "Medication Name" }], "text": "Medication Name" }
MedicationDispense.subject	"subject": { "reference": "Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f", "display": "Patient Name" }
MedicationDispense.context	"context": { "reference": "Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65" }
MedicationDispense.performer	"performer": [{ "actor": { "reference": "Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed", "display": "Provider Name" } }]
MedicationDispense.authorizingPrescription	"authorizingPrescription": [{ "reference": "MedicationRequest/12345", "display": "Medication Description" }]
MedicationDispense.type	"type": { "coding": [{ "system": "http://terminology.hl7.org/CodeSystem/v3-ActCode", "code": "FFC", "display": "First Fill - Complete" }] }
MedicationDispense.quantity	"quantity": { "value": 30, "unit": "tablets", "system": "http://ncimeta.nci.nih.gov", "code": "TAB" }
MedicationDispense.daysSupply	"daysSupply": { "value": 30, "unit": "days", "system": "http://unitsofmeasure.org", "code": "d" }
MedicationDispense.whenHandedOver	"whenHandedOver": "2024-01-15"
MedicationDispense.dosageInstruction	"dosageInstruction": [{ "text": "Take 1 tablet twice daily", "timing": { "repeat": { "frequency": 2, "period": 1, "periodUnit": "d" } }, "doseAndRate": [{ "doseQuantity": { "value": 1, "unit": "tablet", "system": "http://ncimeta.nci.nih.gov", "code": "TAB" } }] }]
MedicationDispense.dosageInstruction.text	"text": "Take 1 tablet twice daily"
MedicationDispense.dosageInstruction.timing	"timing": { "repeat": { "frequency": 2, "period": 1, "periodUnit": "d" } }

MedicationDispense.dosageInstruction.doseAndRate	"doseAndRate": [{ "doseQuantity": { "value": 1, "unit": "tablet", "system": "http://ncimeta.nci.nih.gov", "code": "TAB" } }]

MedicationDispense

For an example JSON response for Specimen, please see the following: MedicationDispense.

This resource is called like the following (with no parameters):

```
GET https://FHIR_URL/  MedicationDispense
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve a specific Specimen record "directly" using an ID (like 1, 2, 500, 5000, etc):

```
GET https://FHIR_URL/MedicationDispense/1
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

You can retrieve the "_revinclude" information with any request using the following:

```
GET
https://FHIR_URL/  MedicationDispense?[parameter=value]&_revinclude=Provenance:target
Authorization: Bearer sntumgwar8ffwrama.hhgtf823.dlfjhimmakegbngwu
```

Search Parameter Summary:

Parameter	Type	Example
_id	token	GET [base]/MedicationDispense?_id=dispense-123
_lastUpdated	date	GET [base]/MedicationDispense?_lastUpdated=2024-01-01
_profile	uri	GET [base]/MedicationDispense?_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-medicationdispense
_security	token	GET [base]/MedicationDispense?_security=http://terminology.hl7.org/CodeSystem/v3-ActReason|HTEST
_tag	token	GET [base]/MedicationDispense?_tag=http://example.org/codes|medication-dispense
code	token	GET [base]/MedicationDispense?code=http://www.nlm.nih.gov/research/umls/rxnorm|12345
context	reference	GET [base]/MedicationDispense?context=Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65
destination	reference	GET [base]/MedicationDispense?destination=Location/pharmacy-location
identifier	token	GET [base]/MedicationDispense?identifier=http://amazingcharts.com/pat-medication-order-id|85894073
medication	reference	GET [base]/MedicationDispense?medication=Medication/medication-123
patient	reference	GET [base]/MedicationDispense?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
performer	reference	GET [base]/MedicationDispense?performer=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed
prescription	reference	GET [base]/MedicationDispense?prescription=MedicationRequest/med-request-123
receiver	reference	GET [base]/MedicationDispense?receiver=Patient/0162780a-56cd-df5b-5a4f-

		cd6c6ae8c87f
responsibleparty	reference	GET [base]/MedicationDispense?responsibleparty=Practitioner/prescriber-123
status	token	GET [base]/MedicationDispense?status=completed
subject	reference	GET [base]/MedicationDispense?subject=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
type	token	GET [base]/MedicationDispense?type=http://terminology.hl7.org/CodeSystem/v3-ActCode|FFC
whenhandedover	date	GET [base]/MedicationDispense?whenhandedover=2024-01-15
whenprepared	date	GET [base]/MedicationDispense?whenprepared=2024-01-15

Search Parameter Combination Summary:

Parameter	Type	Example
Patient & Status	composite	GET [base]/MedicationDispense?patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f&status=completed
Medication & Patient	composite	GET [base]/MedicationDispense?medication=Medication/med-123&patient=Patient/0162780a-56cd-df5b-5a4f-cd6c6ae8c87f
Performer & Date Range	composite	GET [base]/MedicationDispense?performer=Practitioner/ce18786f-2974-62ac-e7f6-c5f2412e1aed&whenhandedover=ge2024-01-01&whenhandedover=le2024-12-31
Prescription Reference	reference	GET [base]/MedicationDispense?prescription=MedicationRequest/med-request-123
Date Range	date	GET [base]/MedicationDispense?whenhandedover=ge2024-01-01&whenhandedover=le2024-12-31
Context & Status	composite	GET [base]/MedicationDispense?context=Encounter/6ba79d01-2f1b-da8b-92e2-aa3f3eae7b65&status=completed

Search Composite OR Summary:

Parameter	Types	Example
status	token	GET [base]/ MedicationDispense?status=active,inactive