Pulse

§170.315(G)(10) FHIR API

Documentation

TABLE OF CONTENTS

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 Pulse 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 Pulse. 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 Pulse software

Registration

Developers wishing to integrate with the API must contact the PHI Provider that uses Pulse as their EMR. Pulse 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/pl/endpoints

API Resources:

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

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

Search Parameter Combination Summary:

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

ENCOUTER 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

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

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

US Core Medication Profile
US Core MedicationRequest 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

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

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.

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

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:

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