EndoSoft®

09/23/2026

EndoVault®

API Definition

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Overview

The EndoVault SMART on FHIR is a service developed at EndoSoft for accessing the patient's data through RESTful API. SMART is an open-source, standards-based API that leverages the OAuth 2.0 standard to provide secure, universal access to EHRs. The SMART platform builds on the existing Fast Health Interoperability Resources (hence the name "SMART on FHIR"). SMART standardizes the process through which a third-party application could plug into a data store and access that clinical information. FHIR provides a set of models to standardize the representation of clinical concepts such as allergies and medications in an EHR or other clinical data store.

References:

1. https://inferno.healthit.gov/suites/g10_certification
2. http://hl7.org/fhir/smart-app-launch/STU2/

Authorization

The model supports authorization and authentication by following Outh2 specifications. The benefit of using authorization is that we can define the level of access that a client application can perform. It also brings down the risk by providing a two communication between the server and client applications. When the server receives a request from the client, a token will be generated and given back. This token does have an expiry attached to it. For further access to the server, the client must provide the same token.

Registration

To get the access to the resources, the client applications need to be registered with EndoSoft. During registration process, a client code and password will be generated for the client which will be later used for token generation.

API Endpoint

Representational State Transfer (REST) is a style of software architecture for distributed hypermedia systems such as the World Wide Web. REST-style architectures consist of clients and servers. Clients initiate requests to servers; servers process requests and return appropriate responses. Requests and responses are built around the transfer of "representations" of "resources". A resource can be essentially any coherent and meaningful concept that may be addressed. A representation of a resource is typically a document that captures the current or intended state of a resource. The EndoVault RESTful API is a simple service implemented using HTTPS and can be thought of as a collection of resources, specified as URLs. Some characteristics of the EndoVault RESTful web API:

- The base URL for the web service is https://< service URL>
- The base URL for the bulk data transfer is https://<service URL>/bulk
- The service can return the data in JSON format.
- The service only supports HTTPS method GET and POST.

Clients of the EndoVault RESTful API can be any applications that support HTTPS POST.

Secure channel can be tested from any web browser such as Internet Explorer, Google Chrome, or Firefox etc.



Scopes

Security

TLS 1.2 or Higher Enforcement

The modules enforce Transport Layer Security (TLS) version 1.2 or higher for all communications with its certified FHIR API endpoints. The FHIR API is hosted using Microsoft Internet Information Services (IIS) and is accessible exclusively over HTTPS.

TLS protocol negotiation and enforcement are performed by the Microsoft Windows TLS implementation (Schannel) used by IIS. The hosting environment is configured to support TLS 1.2 or higher and to disable deprecated protocol versions, including TLS 1.0 and TLS 1.1. API clients must therefore successfully negotiate a TLS 1.2 or higher connection before an HTTPS connection to the FHIR API can be established.

If a client attempts to connect using an unsupported TLS version, the TLS handshake is rejected before the client can access a FHIR API endpoint or exchange FHIR resource data. This configuration applies to all certified FHIR API endpoints and ensures that FHIR API data is protected in transit using TLS 1.2 or above.

TLS Configuration

TLS protocol availability for IIS is controlled through the Microsoft Windows Schannel security provider. The production environment hosting the FHIR API is configured so that:

- TLS 1.2 or higher supported versions are enabled for HTTPS communication.
- TLS 1.0 and TLS 1.1 are disabled for server-side communication.
- FHIR API endpoints are exposed through HTTPS and are configured with a valid server certificate.
- Clients that cannot negotiate TLS 1.2 or a higher supported version cannot establish a secure connection to the FHIR API.

The specific Windows configuration mechanism may vary depending on the supported Windows Server version and deployment environment. TLS protocol settings may be managed through Windows Schannel configuration, Group Policy, or other approved system administration mechanisms.

Verification

Administrators can verify TLS enforcement by reviewing the Windows Schannel/TLS configuration on the server hosting IIS and confirming that TLS 1.2 or higher is enabled and deprecated TLS versions are disabled.

TLS enforcement may also be verified through connection testing. A connection attempt to a certified FHIR API HTTPS endpoint using TLS 1.2 or a higher supported protocol should successfully complete TLS negotiation, subject to normal certificate and API access requirements. A connection attempt that explicitly uses TLS 1.0 or TLS 1.1 should fail during TLS negotiation.

Well-known End point

The authorization endpoints accepted by a FHIR resource server can be exposed as a Well-Known Uniform Resource Identifier.

HTTP verb: GET

Syntax: <base url> + /.well-known/smart-configuration

Parameters: No parameters required.

Authorization: No auth required

Example

https://fhirapi.endosoft.com/.well-known/smart-configuration

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	none
Response	

```
{
  "issuer": "https://fhirapi.endosoft.com",
  "jwks_uri": "https://fhirapi.endosoft.com/.well-known/jwks.json",
  "authorization_endpoint": "https://fhirapi.endosoft.com/auth/authorize",
  "token_endpoint": "https://fhirapi.endosoft.com/auth/token",
  "grant_types_supported": [
    "authorization_code",
    "S256"
  ],
  "code_challenge_methods_supported": [
    "authorization_code",
    "S256"
  ],
  "capabilities": [
    "launch-ehr",
    "launch-standalone",
    "client-public",
    "client-confidential-symmetric",
    "sso-openid-connect",
    "context-standalone-patient",
```

```
    "permission-offline",
    "permission-patient",
    "authorize-post",
    "permission-v1",
    "permission-v2",
    "context-banner",
    "context-style",
    "context-ehr-patient",
    "permission-user",
    "context-ehr-encounter"
  ],
  "scopes_supported":[
    "fhirUser",
    "openid",
    "launch"
  ]
}
```


Auth Token

The authorization grant process will generate a token for the client system.

HTTP verb: POST

Syntax: <base url> + / auth/token

Parameters: Multiple parameters

Authorization: No auth required

Example

https://evapistaging.endosoft.com/auth/token

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	POST
Parameters	• Code • code_verifier • grant_type • redirect_uri
Response	
{ "access_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJodHRwczpcL1wvZXZhcGlzdGFnaW5nLmVuZG9zb2Z0LmNvbSIsImF1ZCI6IkVWQ2xpZW50Iiwic3ViIjoiaHR0cHM6XC9cL2V2YXBpc3RhZ2luZy5lbmRvc29mdC5jb20iLCJmaGlyVXNlciI6IlBhdGllbnRcL0hMN0NPTk4xIiwiaWF0IjoxNjY5ODA4OTIzLCJleHAiOjE2Njk4OTUzMjN9.Ql9htn3TaDJ9OLFk2v8P7L6PJECtgyNWc2lxoBTjfeDa-wcULvjqbl7FSJzBvjImy0vVkRj5bZognbzvIesDdP7fVJ5-	

```
UeXnVlFmtME_uILN6IyMvCGK9gagSCbaFE0b3nP2GLraM3-
GADQ4659ZKXrnlYtqjW16uy0EynK32zstPOHX_iX1-e3fp10KGslLwwwW2YdFEXpFm5A1xRxT-
gQJgQv_pm6FeLU-qMXBMtNqMVTg-
ztJZqRvy45_4ULFzdWYHablDJ6TnNFNPyWcKziqKk6_x59d9EL0KMaAmU4hRFqj2eI2wjUQXB2BmkQPZtBZ
4Ewey4h1jdLbvzvHmQ",
  "token_type": "bearer",
  "expires_in": 59,
  "scope": "launch launch/patient openid fhirUser offline_access
patient/Medication.rs patient/AllergyIntolerance.rs patient/CarePlan.rs
patient/CareTeam.rs patient/Condition.rs patient/Device.rs
patient/DiagnosticReport.rs patient/DocumentReference.rs patient/Encounter.rs
patient/Goal.rs patient/Immunization.rs patient/Location.rs
patient/MedicationRequest.rs patient/Observation.rs patient/Organization.rs
patient/Patient.rs patient/Practitioner.rs patient/Procedure.rs
patient/Provenance.rs patient/PractitionerRole.rs patient/ServiceRequest.rs
patient/RelatedPerson.rs patient/Media.rs Patient/*.rs",
  "refresh_token": "e73caa96-ddc4-4612-bab2-2bd140f4114d",
  "id_token":
"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJodHRwczpcL1wvZXZhcGlzdGFnaW5nLmVuZ
G9zb2Z0LmNvbSIsImF1ZCI6IkVWQ2xpZW50Iiwic3ViIjoiaHR0cHM6XC9cL2V2YXBpc3RhZ2luZy5lbmRv
c29mdC5jb20iLCJmaGlyVXNlciI6IlBhdGllbnRcL0hMN0NPTk4xIiwiaWF0IjoxNjY5ODA4OTIzLCJleHA
iOjE2Njk4OTUzMjN9.Ql9htn3TaDJ9OLFk2v8P7L6PJECtgyNWc2lxoBTjfeDa-
wcULvjqbl7FSJzBvjImy0vVkRj5bZognbzvIesDdP7fVJ5-
UeXnVlFmtME_uILN6IyMvCGK9gagSCbaFE0b3nP2GLraM3-
GADQ4659ZKXrnlYtqjW16uy0EynK32zstPOHX_iX1-e3fp10KGslLwwwW2YdFEXpFm5A1xRxT-
gQJgQv_pm6FeLU-qMXBMtNqMVTg-
ztJZqRvy45_4ULFzdWYHablDJ6TnNFNPyWcKziqKk6_x59d9EL0KMaAmU4hRFqj2eI2wjUQXB2BmkQPZtBZ
4Ewey4h1jdLbvzvHmQ",
  "patient": "HL7CONN1",
  "encounter": "1564655",
  "smart_style_url": "https://evapistaging.endosoft.com/styles/smart_v1.json",
  "need_patient_banner": "false"
}
```


Refresh Token

When the offline_access scope is authorized, the module securely issues an initial refresh_token as part of the successful response from the /auth/token endpoint. The refresh token is issued only after the authorization code and associated PKCE code_verifier provided by the native application have been successfully validated. This ensures that the refresh token is provided only to the application that initiated the authorization request. The refresh token is transmitted to the native application over HTTPS using TLS 1.2 or higher and can subsequently be used to obtain a new access token without requiring the user to repeat the initial authorization process.

Refresh Token – Subsequent Connections

For subsequent connections, an application may use a valid refresh token to request a new access token without requiring the user to repeat the initial authentication and authorization process.

The refresh token is submitted to the Health IT Module's token endpoint using the refresh token grant.

HTTP verb: POST

Syntax: <base URL>/auth/token

Authorization: [VERIFY]

Parameters: Multiple

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	POST
Parameters	• grant_type • refresh_token
Response	


```
{
  "access_token":
"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJodHRwczpcL1wvZXZhcGlzdGFnaW5nLmVuZ
G9zb2Z0LmNvbSIsImF1ZCI6IkVWQ2xpZW50Iiwic3ViIjoiaHR0cHM6XC9cL2V2YXBpc3RhZ2luZy5lbmRv
c29mdC5jb20iLCJmaGlyVXNlciI6IlBhdGllbnRcL0hMN0NPTk4xIiwiaWF0IjoxNjY5ODA4OTIzLCJleHA
iOjE2Njk4OTUzMjN9.Ql9htn3TaDJ9OLFk2v8P7L6PJECtgyNWc2lxoBTjfeDa-
wcULvjqbl7FSJzBvjImy0vVkRj5bZognbzvIesDdP7fVJ5-
UeXnVlFmtME_uILN6IyMvCGK9gagSCbaFE0b3nP2GLraM3-
GADQ4659ZKXrnlYtqjW16uy0EynK32zstPOHX_iX1-e3fp10KGslLwwwW2YdFEXpFm5A1xRxT-
gQJgQv_pm6FeLU-qMXBMtNqMVTg-
ztJZqRvy45_4ULFzdWYHablDJ6TnNFNPyWcKziqKk6_x59d9EL0KMaAmU4hRFqj2eI2wjUQXB2BmkQPZtBZ
4Ewey4h1jdLbvzvHmQ",
  "token_type": "bearer",
  "expires_in": 59,
  "scope": "launch launch/patient openid fhirUser offline_access
patient/Medication.rs patient/AllergyIntolerance.rs patient/CarePlan.rs
patient/CareTeam.rs patient/Condition.rs patient/Device.rs
patient/DiagnosticReport.rs patient/DocumentReference.rs patient/Encounter.rs
patient/Goal.rs patient/Immunization.rs patient/Location.rs
patient/MedicationRequest.rs patient/Observation.rs patient/Organization.rs
patient/Patient.rs patient/Practitioner.rs patient/Procedure.rs
patient/Provenance.rs patient/PractitionerRole.rs patient/ServiceRequest.rs
patient/RelatedPerson.rs patient/Media.rs Patient/*.rs",
  "refresh_token": "e73caa96-ddc4-4612-bab2-2bd140f4114d",
  "id_token":
"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJodHRwczpcL1wvZXZhcGlzdGFnaW5nLmVuZ
G9zb2Z0LmNvbSIsImF1ZCI6IkVWQ2xpZW50Iiwic3ViIjoiaHR0cHM6XC9cL2V2YXBpc3RhZ2luZy5lbmRv
c29mdC5jb20iLCJmaGlyVXNlciI6IlBhdGllbnRcL0hMN0NPTk4xIiwiaWF0IjoxNjY5ODA4OTIzLCJleHA
iOjE2Njk4OTUzMjN9.Ql9htn3TaDJ9OLFk2v8P7L6PJECtgyNWc2lxoBTjfeDa-
wcULvjqbl7FSJzBvjImy0vVkRj5bZognbzvIesDdP7fVJ5-
UeXnVlFmtME_uILN6IyMvCGK9gagSCbaFE0b3nP2GLraM3-
GADQ4659ZKXrnlYtqjW16uy0EynK32zstPOHX_iX1-e3fp10KGslLwwwW2YdFEXpFm5A1xRxT-
gQJgQv_pm6FeLU-qMXBMtNqMVTg-
ztJZqRvy45_4ULFzdWYHablDJ6TnNFNPyWcKziqKk6_x59d9EL0KMaAmU4hRFqj2eI2wjUQXB2BmkQPZtBZ
4Ewey4h1jdLbvzvHmQ",
  "patient": "HL7CONN1",
  "encounter": "1564655",
  "smart_style_url": "https://evapistaging.endosoft.com/styles/smart_v1.json",
  "need_patient_banner": "false"
}
```

Upon successful validation of the refresh token, the module issues a new access token that may be used for subsequent authorized FHIR API requests.

Refresh Token Validity

Module issues a refresh token with a validity period of no less than 1 hour. For subsequent connections, a valid refresh token may be used to obtain a new access token without requiring the user to repeat the initial authentication and authorization process.

For applications using the confidential application profile, a successful subsequent refresh-token exchange results in issuance of a refresh token valid for a new period of no less than 1 hour.

OpenID connect well-known configuration

The scope 'openid' will request that EndoSoft's authorization server supply and OpenID Connect identity token as part of the authorization workflow.

HTTP verb: GET

Syntax: <base url> + / .well-known/openid-configuration

Parameters: No parameters

Authorization: No auth required

Example

https://evapistaging.endosoft.com/.well-known/openid-configuration

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	


```
{
  "issuer": "https://evapistaging.endosoft.com",
  "authorization_endpoint": "https://evapistaging.endosoft.com/auth/authorize",
  "token_endpoint": "https://evapistaging.endosoft.com/auth/token",
  "jwks_uri": "https://evapistaging.endosoft.com/.well-known/jwks.json",
  "response_types_supported": "code",
  "subject_types_supported": "public",
  "id_token_signing_alg_values_supported": "RS256",
  "scopes_supported":[
     "fhirUser",
     "openid",
     "launch"
   ]
```

```
}
```

JWKS

Authentication must be through JSON Web Key Sets.

HTTP verb: GET

Syntax: <base url> + / .well-known/jwks.json

Parameters: No parameters

Authorization: No auth required

Example

https://evapistaging.endosoft.com/.well-known/jwks.json

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	


```
{
  "keys": [
    {
      "kty": "RSA",
      "e": "AQAB",
      "kid": "3c404a6c-1120-48c6-b025-0b7865d715f8",
      "n": "vzzTlAv7mSD_XPDqAnkCsJK7zsc9DjM-x-aCAJzxYiSMe_XuBBPRjS89Dzv5aq3PlwDOp-
K4DE3_LGHjLRDyp3bC9C3edDCmfgVLF5Hril-
QblJ4zEFqTnvHzHWzH60X6GXNTE3OW4wodKEi3ctLn_4hwzWSVwpfjLiQJkA0moLif1MNkyVAExth53Y3
FIrgnn9fMccreF_Qw47nL0k1zy4ZugxSA9IAX-mMw3cmrCyxuY5qwcVW5cBPrw-
bziPpoXiPO9_8GLnDM-
1pejtORWrHYfKBjjupRsaxhK5gPF33Z3mQhsxuOFPRUYEgOAxsrfboC0UU6H0YE4gnolUcsw"
    }
  ]
}
```


Capability Statement

A Capability Statement documents a set of capabilities (behaviors) of a FHIR Server or Client for a particular version of FHIR that may be used as a statement of actual server functionality or a statement of required or desired server implementation.

HTTP verb: GET

Syntax: <base url> + /metadata

Parameters: No parameters required.

Authorization: No auth required

Example

https://fhirapi.endosoft.com/metadata

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	none
Response	


```
{
 "resourceType": "CapabilityStatement",
 "id": "base",
 "url": "https://fhirapi.endosoft.com/base",
 "version": "4.0.1",
 "name": "Base FHIR Capability Statement",
 "title": "EndoSoft backend service App",
 "status": "draft",
 "experimental": true,
 "date": "2022-11-29",
 "publisher": "EndoVault",
 "contact": [
  {
   "telecom": [
    {
     "system": "url",
     "value": "http://hl7.org/fhir"
    }
   ]
  }
 ],
 "description": "This profile defines the expected capabilities of the Backend Service App",
 "jurisdiction": [
  {
   "coding": [
    {
     "system": "urn:iso:std:iso:3166",
     "code": "US"
    }
   ]
  }
 ],
 "instantiates": [
  "http://hl7.org/fhir/us/core/CapabilityStatement/us-core-server"
 ],
 "kind": "capability",
 "software": {
```

```
  "name": "EndoVault_EHR"
 },
 "fhirVersion": "4.0.1",
 "format": [
  "json",
  "xml"
 ],
 "rest": [
  {
   "mode": "server",
   "documentation": "Backend Service App to expose endpoint",
   "security": {
    "description": "General security requirements",
    "cors": true
   },
   "resource": [
    {
     "type": "Patient",
     "supportedProfile": [
      "http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient"
     ],
     "profile": "http://hl7.org/fhir/StructureDefinition/Patient",
     "interaction": [
      {
       "code": "read",
       "documentation": "Implemented per the specification (or Insert other doco here)"
      }
     ],
     "conditionalCreate": false,
     "conditionalUpdate": false,
     "searchInclude": [
      "Patient.general-practitioner",
      "Patient.link",
      "Patient.organization"
     ],
     "searchRevInclude": [
      "AllergyIntolerance.patient",
      "CarePlan.patient"
     ],
     "searchParam": [
      {
       "name": "identifier",
       "definition": "http://hl7.org/fhir/SearchParameter/Patient-identifier",
       "type": "token",
       "documentation": "A patient identifier"
      },
      {
       "name": "birthdate",
```

```
        "definition": "http://hl7.org/fhir/SearchParameter/individual-birthdate",
        "type": "date",
        "documentation": "The patients date of birth"
       },
       {
        "name": "family",
        "definition": "http://hl7.org/fhir/SearchParameter/individual-family",
        "type": "string",
        "documentation": "A portion of the family name of the patient"
       },
       {
        "name": "name",
        "definition": "http://hl7.org/fhir/SearchParameter/Patient-name",
        "type": "string",
        "documentation": "A portion of the family name of the patient"
       }
      ]
     },
     {
      "type": "AllergyIntolerance",
      "supportedProfile": [
       "http://hl7.org/fhir/us/core/StructureDefinition/us-core-allergyintolerance"
      ],
      "profile": "http://hl7.org/fhir/StructureDefinition/AllergyIntolerance",
      "interaction": [
       {
        "code": "read",
        "documentation": "Implemented per the specification (or Insert other doco here)"
       }
      ],
      "conditionalCreate": false,
      "conditionalUpdate": false,
      "searchInclude": [
       "AllergyIntolerance.patient"
      ],
      "searchRevInclude": [
       "ClinicalImpression.problem"
      ],
      "searchParam": [
       {
        "name": "clinical-status",
        "definition": "http://hl7.org/fhir/SearchParameter/AllergyIntolerance-clinical-status",
        "type": "token",
        "documentation": "active | inactive | resolved"
       }
      ]
     }
    ],
```

```
    "operation": [
     {
      "name": "process-message",
      "definition": "http://hl7.org/fhir/OperationDefinition/MessageHeader-process-message"
     }
    ]
   }
  ]
}
```


Provenance

Provenance of a resource is a record that describes entities and processes involved in producing and delivering or otherwise influencing that resource.

HTTP verb: GET

Syntax: <base url> + /Provenance

Parameters: The identifier from patient, practitioner and/or any resources that possess the provenance information.

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Provenance/1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Provenance identifier
Response	


```
{
 "resourceType": "Provenance",
 "id": "1",
 "text": {
  "status": "generated",
  "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
 },
 "target": [
  {
   "extension": [
    {
     "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
     "valueUri": "n1"
    }
```

```
      ],
      "reference": "Practitioner/742"
    }
  ],
  "recorded": "2022-11-29T22:41:33-05:00",
  "agent": [
    {
      "type": {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/provenance-participant-type",
            "code": "author"
          }
        ]
      },
      "who": {
        "reference": "Practitioner/742"
      },
      "onBehalfOf": {
        "reference": "Practitioner/742"
      }
    },
    {
      "type": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-provenance-participant-type",
            "code": "transmitter"
          }
        ]
      },
      "who": {
        "reference": "Organization/1"
      },
      "onBehalfOf": {
        "reference": "Organization/1"
      }
    }
  ]
}
```


Scopes

The module supports SMART on FHIR authorization scopes to define and control the access granted to client applications. Applications request the applicable scopes during the authorization process, and the scopes granted to the application are returned in the scope element of the token response.

The following scopes are supported:

Scope	Description
launch	Supports application launch within an EHR context.
launch/patient	Requests patient context during application launch.
openid	Requests OpenID Connect authentication.
fhirUser	Requests the identity of the authenticated FHIR user.
offline_access	Requests continued access using a refresh token.
patient/<Resource>.rs	Provides read and search access to the specified supported FHIR resource for the authorized patient.
patient/*.rs	Provides read and search access to all supported patient-level FHIR resources.

The module supports resource-specific patient scopes for Medication, AllergyIntolerance, CarePlan, CareTeam, Condition, Device, DiagnosticReport, DocumentReference, Encounter, Goal, Immunization, Location, MedicationRequest, Observation, Organization, Patient, Practitioner, Procedure, Provenance, PractitionerRole, ServiceRequest, RelatedPerson, and Media.

Individual

Patient

The Patient Resource provides general demographic information about a person. The resource fields include patient id, patient name, gender, date of birth, address, phone, primary language, and marital status etc.

HTTP verb: GET

Syntax: <base url> + /Patient

Parameters: The identifier and/or general search

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Patient/_search

Request parameters: _id=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Identifier • _id • Name

	• birthdate & name • gender & name
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "content-bundle-example",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2022-01-03T02:03:28.045+00:00",
    "profile": [
      "http://hl7.org/fhir/us/medmorph/StructureDefinition/us-ph-content-bundle"
    ]
  },
  "type": "collection",
  "timestamp": "2022-01-03T11:15:33-10:00",
  "entry": [
    {
      "fullUrl": "Patient/HL7CONN1",
      "resource": {
        "resourceType": "Patient",
        "id": "HL7CONN1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "identifier": [
          {
            "use": "official",
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
                  "code": "MR"
                }
              ]
            },
            "system": "urn:oid:0.1.2.3.4.5.6.7",
            "value": "HL7CONN1"
          },
          {
            "use": "temp",
            "type": {
              "coding": [
                {
```

```
                  "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
                  "code": "Temp"
                }
              ]
            },
            "_system": {
              "extension": [
                {
                  "url": "http://hl7.org/fhir/StructureDefinition/data-absent-
reason",
                  "valueCode": "unknown"
                }
              ]
            },
            "value": "HL7CONN1_1"
          }
        ],
        "active": true,
        "extension": [
          {
            "extension": [
              {
                "url": "ombCategory",
                "valueCoding": {
                  "system": "urn:oid:2.16.840.1.113883.6.238",
                  "code": "2028-9",
                  "display": "Asian"
                }
              },
              {
                "valueString": "Asian",
                "url": "text"
              }
            ],
            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
race"
          },
          {
            "extension": [
              {
                "url": "detailed",
                "valueCoding": {
                  "system": "urn:oid:2.16.840.1.113883.6.238",
                  "code": "2178-2",
                  "display": "Latino"
                }
              },
              {
                "valueString": "Latino",
                "url": "text"
              }
            ],
            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
ethnicity"
          },
```

```
          {
            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
birthsex",
            "valueCode": "F"
          },
          {
            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
genderIdentity",
            "valueCodeableConcept": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/v3-
NullFlavor",
                  "code": "ASKU",
                  "display": "asked but unknown"
                }
              ]
            }
          }
        ],
        "name": [
          {
            "use": "old",
            "family": "Shepherd",
            "given": [
              "Meredith"
            ],
            "period": {
              "end": "2022-01-01"
            }
          },
          {
            "use": "official",
            "family": "Shepherd",
            "given": [
              "Meredith"
            ],
            "suffix": [
              "Sr."
            ]
          }
        ],
        "telecom": [
          {
            "system": "phone",
            "value": "(206)555-1313",
            "use": "home"
          },
          {
            "system": "email",
            "value": "test@endosoft.com"
          }
        ],
        "gender": "female",
        "birthDate": "1960-02-20",
```

```
        "address": [
          {
            "use": "old",
            "line": [
              "111 Main Street"
            ],
            "city": "Seattle",
            "state": "WA",
            "postalCode": "98101",
            "period": {
              "start": "2012-01-01",
              "end": "2015-01-31"
            }
          },
          {
            "use": "home",
            "line": [
              "111 Main Street"
            ],
            "city": "Seattle",
            "state": "WA",
            "postalCode": "98101",
            "period": {
              "start": "2015-01-01",
              "end": "2022-01-31"
            }
          }
        ],
        "communication": [
          {
            "language": {
              "coding": [
                {
                  "system": "urn:ietf:bcp:47",
                  "code": "en",
                  "display": "English"
                }
              ]
            }
          }
        ],
        "managingOrganization": {
          "reference": "Organization/1",
          "display": "EndoVault Medical Center"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
```

```
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Patient/HL7CONN1"
          }
        ],
        "recorded": "2022-11-29T22:38:52-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Patient/HL7CONN1"
            },
            "onBehalfOf": {
              "reference": "Patient/HL7CONN1"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```

Practitioner

A person who is directly or indirectly involved in the provisioning of healthcare. Practitioner covers all individuals who are engaged in the healthcare process and healthcare-related services as part of their formal responsibilities and this Resource is used for attribution of activities and responsibilities to these individuals.

HTTP verb: GET

Syntax: <base url> + /Practitioner

Parameters: The identifier

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Practitioner/2

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Identifier
Response	


```
{
  "resourceType": "Practitioner",
  "id": "2",
  "meta": {
    "extension": [
      {
        "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
        "valueString": "Practitioner 1 Example"
      }
    ],
    "profile": [
      "http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"
    ]
  },
  "identifier": [
    {
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "1234567A"
    }
  ],
  "active": true,
  "name": [
    {
      "use": "official",
      "family": "SYSDBA",
      "given": [
        "SYSDBA"
```

```
      ],
      "suffix": [
        "Dr."
      ]
    }
  ],
  "gender": "male",
  "telecom": [
    {
      "system": "phone",
      "value": "5188318000",
      "use": "work"
    }
  ],
  "address": [
    {
      "use": "home",
      "line": [
        "135, Broadway"
      ],
      "city": "NY",
      "state": "NY",
      "postalCode": "12345",
      "country": "US",
      "type": "postal"
    }
  ]
}
```


Related Person

Information about a person that is involved in a patient's health or the care for a patient, but who is not the target of healthcare, nor has a formal responsibility in the care process. RelatedPersons typically have a personal relationship or non-healthcare-specific professional relationship with the patient. A RelatedPerson resource is primarily used for attribution of information, since RelatedPersons are often a source of information about the patient. For keeping information about people for contact purposes for a patient, use a Patient's Contact element. Some individuals may serve as both a Patient's Contact and a Related Person.

HTTP verb: GET

Syntax: <base url> + /RelatedPerson

Parameters: The identifier

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/RelatedPerson/1

Name	Value

accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Identifier
Response	


```
{
  "resourceType": "RelatedPerson",
  "id": "1",
  "meta": {
    "extension": [
      {
        "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
        "valueString": "Patient NOK"
      },
      {
        "url": "http://hl7.org/fhir/StructureDefinition/instance-description",
        "valueMarkdown": "Care team"
      }
    ],
    "profile": [
      "http://hl7.org/fhir/us/core/StructureDefinition/us-core-relatedperson"
    ]
  },
  "text": {
    "status": "generated",
    "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
  },
  "active": true,
  "patient": {
    "reference": "Patient/HL7CONN1",
    "display": "Shepherd Meredith Lynn"
  },
  "relationship": [
    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
          "code": "UNCLE",
          "display": "Uncle"
        }
      ]
    }
  ],
  "name": [
    {
      "use": "official",
      "family": "Test",
      "given": [
        "John"
      ]
```

```
    }
  ],
  "telecom": [
    {
      "system": "phone",
      "value": "518 8318000",
      "use": "home"
    },
    {
      "system": "email",
      "value": "nok@endosoft.com",
      "use": "home"
    }
  ],
  "birthDate": "2000-01-01",
  "address": [
    {
      "use": "home",
      "line": [
        "135 Broadway"
      ],
      "city": "Schenectady",
      "state": "NY",
      "postalCode": "12305"
    }
  ]
}
```


Entities

Organization

A formally or informally recognized grouping of people or organizations formed for the purpose of achieving some form of collective action. Includes companies, institutions, corporations, departments, community groups, healthcare practice groups, payer/insurer, etc. This resource may be used in a shared registry of contact and other information for various organizations, or it can be used merely as a support for other resources that need to reference organizations, perhaps as a document, message or as a contained resource. If using a registry approach, it's entirely possible for multiple registries to exist, each dealing with different types or levels of organization.

HTTP verb: GET

Syntax: <base url> + /Organization

Parameters: The identifier

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Organization/1

Name	Value

accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Identifier

Response


```
{
  "resourceType": "Organization",
  "id": "1",
  "identifier": [
    {
      "use": "official",
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "1891072237"
    }
  ],
  "type": [
    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/organization-type",
          "code": "prov",
          "display": "Healthcare Provider"
        }
      ]
    }
  ],
  "active": true,
  "name": "Endovault Medical Center",
  "telecom": [
    {
      "system": "phone",
      "value": "518-831-8000",
      "use": "work"
    }
  ],
  "address": [
    {
      "use": "work",
      "line": [
        "135 Broadway"
      ],
      "city": "Schenectady",
      "postalCode": "12305",
      "state": "NY",
      "country": "US"
    }
  ]
}
```

Management

Encounter

An interaction between a patient and healthcare provider(s) for the purpose of providing healthcare service(s) or assessing the health status of a patient. Encounter is primarily used to record information about the actual activities that occurred, where Appointment is used to record planned activities.

A patient encounter is further characterized by the setting in which it takes place. Amongst them are ambulatory, emergency, home health, inpatient and virtual encounters. An Encounter encompasses the lifecycle from pre-admission, the actual encounter (for ambulatory encounters), and admission, stay and discharge (for inpatient encounters). During the encounter the patient may move from practitioner to practitioner and location to location.

HTTP verb: GET

Syntax: <base url> + /Encounter

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Encounter?patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Patient • _patient=Patient/Identifier • _id • Date & patient • Identifier • _revInclude & Patient
HTTP verb	POST
Parameters	_search
Response	

```
{
  "resourceType": "Bundle",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://example.org/api/FHIR/R4/Encounter?patient=HL7CONN1"
    }
  ],
  "fullUrl": "https://example.org/api/FHIR/R4/Encounter?patient=HL7CONN1",
  "entry": [
```

```
    {
      "link": [
        {
          "relation": "self",
          "url": "https://example.org/api/FHIR/R4/Encounter/1564653"
        }
      ],
      "fullUrl": "https://example.org/api/FHIR/R4/Encounter/1564653",
      "resource": {
        "resourceType": "Encounter",
        "id": "1564653",
        "identifier": [
          {
            "use": "temp",
            "value": "Encounter_1564653",
            "system": "urn:oid:0.1.2.3.4.5.6.7"
          }
        ],
        "status": "arrived",
        "type": [
          {
            "coding": [
              {
                "system": "http://snomed.info/sct",
                "code": "11429006",
                "display": "Consultation"
              }
            ]
          }
        ],
        "location": [
          {
            "location": {
              "reference": "Practitioner/742",
              "display": "Endovault Medical Center"
            }
          }
        ],
        "participant": [
          {
            "type": [
              {
                "coding": [
                  {
                    "system": "http://terminology.hl7.org/CodeSystem/v3-
ParticipationType",
                    "code": "PPRF",
                    "display": "primary performer"
                  }
                ]
              }
            ],
            "period": {
              "start": "2021-05-01"
            },
```

```
            "individual": {
              "reference": "Practitioner/742",
              "display": "Kiki Bambrick"
            }
          }
        ],
        "hospitalization": {
          "dischargeDisposition": {
            "coding": [
              {
                "system": "http://www.nubc.org/patient-discharge",
                "code": "01",
                "display": "Discharged to Home"
              }
            ]
          }
        },
        "reasonCode": [
          {
            "text": "Infiltrating duct carcinoma of breast (disorder)\r\n"
          }
        ],
        "class": {
          "system": "http://terminology.hl7.org/CodeSystem/v3-ActCode",
          "code": "AMB",
          "display": "ambulatory",
          "userSelected": false
        },
        "period": {
          "start": "2021-05-01T08:00:00+04:00",
          "end": "2021-05-01T08:00:00+04:00"
        },
        "subject": {
          "reference": "Patient/HL7CONN1",
          "display": "Shepherd Meredith Lynn"
        }
      },
      "search": {
        "mode": "match"
      }
    }
  ]
}
```


Clinical

AllergyIntolerance

Risk of harmful or undesirable physiological response which is specific to an individual and associated with exposure to a substance.

A record of a clinical assessment of an allergy or intolerance; a propensity, or a potential risk to an individual, to have an adverse reaction on future exposure to the specified substance, or class of substance.

Where a propensity is identified, to record information or evidence about a reaction event that is characterized by any harmful or undesirable physiological response that is specific to the individual and triggered by exposure of an individual to the identified substance or class of substance.

Substances include but are not limited to a therapeutic substance administered correctly at an appropriate dosage for the individual; food; material derived from plants or animals; or venom from insect stings.

HTTP verb: GET & POST

Syntax: <base url> + / AllergyIntolerance

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/AllergyIntolerance?patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Patient • _patient=Patient/Identifier • Identifier • _revInclude & Patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "content-bundle-example",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2022-01-03T02:03:28.045+00:00",
    "profile": [
      "http://hl7.org/fhir/us/medmorph/StructureDefinition/us-ph-content-bundle"
    ]
  },
  "type": "collection",
  "timestamp": "2022-01-03T11:15:33-10:00",
  "entry": [
    {
      "fullUrl": "Patient/HL7CONN1",
```

```
      "resource": {
        "resourceType": "AllergyIntolerance",
        "id": "29",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "clinicalStatus": {
          "coding": [
            {
              "system":
"http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical",
              "code": "active"
            }
          ]
        },
        "verificationStatus": {
          "coding": [
            {
              "system":
"http://terminology.hl7.org/CodeSystem/allergyintolerance-verification",
              "code": "confirmed"
            }
          ]
        },
        "category": [
          "medication"
        ],
        "criticality": "low",
        "code": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "763875007",
              "display": "sulfonamide antibacterial"
            }
          ],
          "text": "sulfonamide antibacterial"
        },
        "patient": {
          "reference": "Patient/HL7CONN1",
          "display": "Shepherd Meredith Lynn"
        },
        "reaction": [
          {
            "manifestation": [
              {
                "coding": [
                  {
                    "system": "http://snomed.info/sct",
                    "code": "271807003",
```

```
                    "display": "skin rash"
                  }
                ],
                "text": "skin rash"
              }
            ],
            "severity": "mild"
          }
        ]
      }
    }
  ]
}
```


Condition

A clinical condition, problem, diagnosis, or other event, situation, issue, or clinical concept that has risen to a level of concern.

This resource is used to record detailed information about a condition, problem, diagnosis, or other event, situation, issue, or clinical concept that has risen to a level of concern. The condition could be a point in time diagnosis in context of an encounter, it could be an item on the practitioner's Problem List, or it could be a concern that doesn't exist on the practitioner's Problem List. Often, a condition is about a clinician's assessment and assertion of a particular aspect of a patient's state of health. It can be used to record information about a disease/illness identified from application of clinical reasoning over the pathologic and pathophysiologic findings (diagnosis), or identification of health issues/situations that a practitioner considers harmful, potentially harmful and may be investigated and managed (problem), or other health issue/situation that may require ongoing monitoring and/or management (health issue/concern).

Encounter Diagnosis

The US Core Condition Profile has been split into the US Core Condition Encounter Diagnosis Profile and US Core Condition Problems and Health Concerns Profile.

HTTP verb: GET & POST

Syntax: <base url> + / Condition

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Condition?patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters

	• Patient • _patient=Patient/Identifier • Identifier • _revInclude & Patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Condition?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Condition/16",
      "resource": {
        "resourceType": "Condition",
        "id": "16",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-06-11T04:05:04.000Z",
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Encounter Diagnosis"
            },
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-
description",
              "valueMarkdown": "US Core Condition Encounter Diagnosis"
            }
          ],
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-condition-
encounter-diagnosis"
          ]
        },
        "clinicalStatus": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/condition-
clinical",
              "code": "resolved",
              "display": "resolved"
            }
          ]
        },
```

```
        "verificationStatus": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/condition-ver-
status",
              "code": "confirmed",
              "display": "Confirmed"
            }
          ]
        },
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/condition-
category",
                "code": "encounter-diagnosis",
                "display": "Encounter Diagnosis"
              }
            ]
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://www.cms.gov/Medicare/Coding/ICD10/index.html",
              "code": "E11.9",
              "display": "Type 2 diabetes mellitus without complications"
            }
          ]
        },
        "subject": {
          "reference": "Patient/HL7CONN1",
          "display": "Shepherd Meredith Lynn"
        },
        "recordedDate": "2015-05-02T00:00:00.000-00:00",
        "abatementDateTime": "2015-05-02T00:00:00.000-00:00",
        "onsetDateTime": "2015-05-02T00:00:00.000-00:00",
        "encounter": {
          "reference": "Encounter/1564655"
        },
        "recorder": {
          "reference": "Practitioner/742",
          "display": "Kiki Bambrick"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
```

```
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Encounter/1564653"
          }
        ],
        "recorded": "2022-11-29T22:39:04-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/742"
            },
            "onBehalfOf": {
              "reference": "Practitioner/742"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```

Problems and Health Concerns

The US Core Condition Profile has been split into the US Core Condition Encounter Diagnosis Profile and US Core Condition Problems and Health Concerns Profile.

HTTP verb: GET & POST

Syntax: <base url> + / Condition

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Condition?patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Patient • _patient=Patient/Identifier • Identifier • _revInclude & Patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Condition?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Condition/16",
      "resource": {
        "resourceType": "Condition",
        "id": "16",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-06-11T04:05:04.000Z",
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Encounter Diagnosis"
```

```
            },
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-
description",
              "valueMarkdown": "US Core Condition Encounter Diagnosis"
            }
          ],
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-condition-
encounter-diagnosis"
          ]
        },
        "clinicalStatus": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/condition-
clinical",
              "code": "resolved",
              "display": "resolved"
            }
          ]
        },
        "verificationStatus": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/condition-ver-
status",
              "code": "confirmed",
              "display": "Confirmed"
            }
          ]
        },
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/condition-
category",
                "code": "encounter-diagnosis",
                "display": "Encounter Diagnosis"
              }
            ]
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://www.cms.gov/Medicare/Coding/ICD10/index.html",
              "code": "E11.9",
              "display": "Type 2 diabetes mellitus without complications"
            }
          ]
        },
        "subject": {
          "reference": "Patient/HL7CONN1",
```

```
          "display": "Shepherd Meredith Lynn"
        },
        "recordedDate": "2015-05-02T00:00:00.000-00:00",
        "abatementDateTime": "2015-05-02T00:00:00.000-00:00",
        "onsetDateTime": "2015-05-02T00:00:00.000-00:00",
        "encounter": {
          "reference": "Encounter/1564655"
        },
        "recorder": {
          "reference": "Practitioner/742",
          "display": "Kiki Bambrick"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Encounter/1564653"
          }
        ],
        "recorded": "2022-11-29T22:39:06-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/742"
            },
            "onBehalfOf": {
              "reference": "Practitioner/742"
            }
          },
          {
            "type": {
```

```
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Procedure

An action that is or was performed on or for a patient, practitioner, device, organization, or location. For example, this can be a physical intervention on a patient like an operation, or less invasive like long term services, counseling, or hypnotherapy. This can be a quality or safety inspection for a location, organization, or device. This can be an accreditation procedure on a practitioner for licensing.

HTTP verb: GET & POST

Syntax: <base url> + / Procedure

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Procedure?patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Patient • _patient=Patient/Identifier • Date + patient • Identifier • _revInclude & Patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "Procedure_HL7CONN1",
  "type": "searchset",
  "link": [
    {
      "relation": "self",
      "url": "https://example.org/api/FHIR/R4/Procedure?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://example.org/api/FHIR/R4/Procedure/604",
      "resource": {
        "resourceType": "Procedure",
        "id": "604",
        "status": "completed",
        "code": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "COLON",
              "display": "Colonoscopy"
            }
          ],
          "text": "Colonoscopy"
        },
        "subject": {
          "reference": "Patient/HL7CONN1",
          "display": "Shepherd Meredith Lynn"
        },
        "performedDateTime": "2022-05-07"
      }
    }
  ]
}
```


DiagnosticReport

The findings and interpretation of diagnostic tests performed on patients, groups of patients, products, substances, devices, and locations, and/or specimens derived from these. The report includes clinical context such as requesting provider information, and some mix of atomic results, images, textual and coded interpretations, and formatted representation of diagnostic reports. The report also includes non-clinical context such as batch analysis and stability reporting of products and substances.

Report and Note Exchange

A diagnostic report is the set of information that is typically provided by a diagnostic service when investigations are complete.

HTTP verb: GET & POST

Syntax: <base url> + / DiagnosticReport

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/DiagnosticReport?category=LP29684-5&patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Category & patient • Category & patient=Patient/Identifier • Patient • Category, date & patient • Code & patient • Identifier • _revinclude, category & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "/DiagnosticReport?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "/DiagnosticReport/RAD-4",
      "resource": {
        "resourceType": "DiagnosticReport",
        "id": "RAD-4",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
diagnosticreport-note"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
```

```
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://loinc.org",
                "code": "LP29684-5",
                "display": "Radiology"
              }
            ],
            "text": "Radiology"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "30746-2",
              "display": "Portable XR Chest Views"
            }
          ],
          "text": "Portable XR Chest Views"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "encounter": {
          "reference": "Encounter/1564718"
        },
        "effectiveDateTime": "2022-11-10T22:31:30+04:00",
        "issued": "2022-11-10T22:31:30+04:00",
        "performer": [
          {
            "reference": "Practitioner/742"
          },
          {
            "reference": "Organization/1"
          }
        ],
        "result": [
          {
            "reference": "Observation/IF-4",
            "display": "Findings"
          },
          {
            "reference": "Observation/IM-4",
            "display": "Impression"
          },
          {
            "reference": "Observation/CR-300",
            "display": "Clinical Test Result"
```

```
          }
        ],
        "media": [
          {
            "link": {
              "reference": "DocumentReference/10",
              "display": "Portable XR Chest Views"
            }
          }
        ],
        "presentedForm": [
          {
            "contentType": "application/html",
            "data":
"PGRpdiB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMTk5OS94aHRtbCI+PHA+PGI+UGF0aWVudDwvYj48L3A+PHA+PGI+TmFtZTwvYj46IEhMN0NPTk4xPC9wPjxwPjxiPlN0YXR1czwvYj46IEFjdGl2ZTwvcD48cD48Yj5ET0I8L2I+OiAxOTgwLTEwLTIyPC9wPjxwPjxiPkFkbWluaXN0cmF0aXZlIEdlbmRlcjwvYj46IE1hbGU8L3A+PHA+TWFyaXRhbCBTdGF0dXM8L2I+OiBMZWdhbGx5IE1hcnJpZWQ8L3A+PC9kaXY+"
          }
        ]
      }
    }
  ]
}
```


Laboratory Results Reporting

The information includes a mix of atomic results, text reports, images, and codes. The mix varies depending on the nature of the diagnostic procedure, and sometimes on the nature of the outcomes for a particular investigation.

HTTP verb: GET & POST

Syntax: <base url> + / DiagnosticReport

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/DiagnosticReport?category=LAB&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Category & patient • Patient • Category, date & patient • Code & patient

	• Identifier • _revinclude, category & patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "/DiagnosticReport?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "/DiagnosticReport/LAB-32",
      "resource": {
        "resourceType": "DiagnosticReport",
        "id": "LAB-32",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
diagnosticreport-lab"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/v2-0074",
                "code": "LAB",
                "display": "Laboratory"
              }
            ]
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "74774-1",
              "display": "Blood Glucose Test"
```

```
            }
          ]
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-14T11:50:02+04:00",
        "issued": "2022-11-14T11:50:02+04:00",
        "performer": [
          {
            "reference": "Organization/1"
          },
          {
            "reference": "Practitioner/2"
          }
        ],
        "result": [
          {
            "reference": "Observation/LR-54",
            "display": "86"
          },
          {
            "reference": "Observation/LR-58",
            "display": "Normal"
          }
        ]
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "DiagnosticReport/LAB-32"
          }
        ],
        "recorded": "2022-11-29T22:39:20-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
```

```
                    "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                    "code": "author"
                  }
                ]
              },
              "who": {
                "reference": "Practitioner/2"
              },
              "onBehalfOf": {
                "reference": "Practitioner/2"
              }
            },
            {
              "type": {
                "coding": [
                  {
                    "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                    "code": "transmitter"
                  }
                ]
              },
              "who": {
                "reference": "Organization/1"
              },
              "onBehalfOf": {
                "reference": "Organization/1"
              }
            }
          ]
        }
      }
    ]
}
```


Observation

Observations are a central element in healthcare, used to support diagnosis, monitor progress, determine baselines and patterns, and even capture demographic characteristics, as well as capture results of tests performed on products and substances. Most observations are simple name/value pair assertions with some metadata, but some observations group other observations together logically, or even are multi-component observations. Note that the DiagnosticReport resource provides a clinical or workflow context for a set of observations and the Observation resource is referenced by DiagnosticReport to represent laboratory, imaging, and other clinical and diagnostic data to form a complete report.

Laboratory Results

HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?category=laboratory&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Category & Patient • Category & patient=Patient/Identifier • Category, date & patient • Code & patient • Identifier • _revinclude, category & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "observation-bundle",
  "entry": [
    {
      "resource": {
        "resourceType": "Observation",
        "id": "LR-57",
        "meta": {
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Lab Result"
            }
          ],
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
observation-lab"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
```

```
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "laboratory",
                "display": "Laboratory"
              }
            ],
            "text": "Laboratory"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "57803-9",
              "display": "FOBT"
            }
          ]
        },
        "subject": {
          "reference": "Patient/HL7CONN1",
          "display": "Shepherd Meredith Lynn"
        },
        "effectiveDateTime": "2022-11-10",
        "valueCodeableConcept": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "10828004",
              "display": "Positive"
            }
          ],
          "text": "Positive"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Patient/HL7CONN1"
          }
```

```
        ],
        "recorded": "2022-11-29T22:39:47-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/9"
            },
            "onBehalfOf": {
              "reference": "Practitioner/9"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


SDOH Assessments

HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?category=survey&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Category & Patient • Category & patient=Patient/Identifier • Category, date & patient • Code & patient • Identifier • _revinclude, category & patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "4",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/SDOH-1",
      "resource": {
        "resourceType": "Observation",
        "id": "SDOH-1",
        "meta": {
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Social History Survey Example"
            }
          ],
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
observation-sdohh-assessment"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
```

```
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-tags",
                "code": "sdoh",
                "display": "SDOH"
              }
            ]
          },
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "survey",
                "display": "Survey"
              }
            ]
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "88124-3",
              "display": "Food insecurity risk [HVS]"
            }
          ],
          "text": "Food insecurity risk [HVS]"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-05-07T00:00:00+04:00",
        "performer": [
          {
            "reference": "Practitioner/2"
          }
        ],
        "valueString": "Food insecurity risk [HVS]"
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
```

```
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/SDOH-1"
          }
        ],
        "recorded": "2022-11-29T22:39:51-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```

Respiratory Rate

HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=9279-1&patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & Patient • code & patient=Patient/Identifier • Category, date & patient • Category & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/RR-10",
      "resource": {
        "resourceType": "Observation",
        "id": "RR-10",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/vitalsigns"
          ],
          "extension": [
            {
              "url": "http://hl7.org/fhir/ValueSet/data-absent-reason",
              "valueString": "Data absent Example"
```

```
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "9279-1",
              "display": "Respiratory rate"
            }
          ],
          "text": "Respiratory rate"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 3,
          "unit": "breaths/minute",
          "system": "http://unitsofmeasure.org",
          "code": "/min"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
```

```
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/RR-10"
          }
        ],
        "recorded": "2022-11-29T22:39:56-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```

Social History

HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?category=social-history&patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Category & patient • category & patient=Patient/Identifier • Category, date & patient • code & Patient • Identifier • _revinclude, category & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "/Observation/SCH-21",
      "resource": {
        "resourceType": "Observation",
        "id": "SCH-21",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
observation-social-history"
          ],
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
```

```
              "valueString": "Social History Assessment Example"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-tags",
                "code": "sdoh",
                "display": "SDOH"
              }
            ]
          },
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "social-history",
                "display": "Social History"
              }
            ],
            "text": "Social History"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "228360000",
              "display": " Attitude to drinking"
            }
          ],
          "text": " Attitude to drinking"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-05-07T00:00:00+04:00",
        "valueQuantity": {
          "value": 4,
          "system": "http://unitsofmeasure.org",
          "code": "{Drinks}/d"
        },
        "performer": [
```

```
          {
            "reference": "Practitioner/2"
          }
        ]
      }
    }
  ]
}
```


Heart Rate
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=8867-4&patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/HR-10",
```

```
      "resource": {
        "resourceType": "Observation",
        "id": "HR-10",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/vitalsigns"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "8867-4",
              "display": "Heart rate"
            }
          ],
          "text": "Heart rate"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 98,
          "unit": "beats/minute",
          "system": "http://unitsofmeasure.org",
          "code": "/min"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
```

```
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/HR-10"
          }
        ],
        "recorded": "2022-11-29T22:40:05-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
```

```
    }
  ]
}
```


Body Temperature
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=8310-5&patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/BT-10",
      "resource": {
        "resourceType": "Observation",
        "id": "BT-10",
        "meta": {
          "profile": [
```

```
            "http://hl7.org/fhir/StructureDefinition/vitalsigns"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "8310-5",
              "display": "Body temperature"
            }
          ],
          "text": "Body temperature"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 89,
          "unit": "F",
          "system": "http://unitsofmeasure.org",
          "code": "[degF]"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
```

```
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/BT-10"
          }
        ],
        "recorded": "2022-11-29T22:40:09-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```

Pediatric Weight for Height
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=77606-2&patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/CHAGE-1564655",
      "resource": {
        "resourceType": "Observation",
        "id": "CHAGE-1564655",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/pediatric-weight-
for-height"
          ]
        },
        "text": {
          "status": "generated",
```

```
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>: Test
Patient Pediatric</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 2021-11-
09</p><p><b>Administrative Gender</b>: Male</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "77606-2",
              "display": "Weight-for-length Per age and sex"
            }
          ],
          "text": "BMI"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "encounter": {
          "display": "Colonoscopy"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 23.3,
          "unit": "%",
          "system": "http://unitsofmeasure.org",
          "code": "%"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
```

```
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/CHAGE-1564655"
          }
        ],
        "recorded": "2022-11-29T22:40:13-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```

Pulse Oximetry

HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=59408-5&patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/PO-10",
      "resource": {
        "resourceType": "Observation",
        "id": "PO-10",
        "meta": {
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Oxygen Saturation Example"
            }
          ],
          "profile": [
```

```
            "http://http://hl7.org/fhir/us/core/StructureDefinition/us-core-
pulse-oximetry",
            "http://hl7.org/fhir/us/vitals/StructureDefinition/oxygen-
saturation-arterial-blood-pulseOx"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "partOf": [
          {
            "reference": "Encounter/1564655"
          }
        ],
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "2708-6",
              "display": "Oxygen saturation in Arterial blood"
            },
            {
              "system": "urn:iso:std:iso:11073:10101",
              "code": "150456",
              "display": "OMDC_PULS_OXIM_SAT_O2"
            },
            {
              "system": "http://loinc.org",
              "code": "59408-5",
              "display": "Oxygen saturation in Arterial blood by Pulse oximetry"
            }
          ]
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
```

```
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 98,
          "unit": "%",
          "system": "http://unitsofmeasure.org",
          "code": "%"
        },
        "interpretation": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
                "code": "N",
                "display": "Normal"
              }
            ],
            "text": "Normal"
          }
        ],
        "referenceRange": [
          {
            "low": {
              "value": 90,
              "unit": "%",
              "system": "http://unitsofmeasure.org",
              "code": "%"
            },
            "high": {
              "value": 99,
              "unit": "%",
              "system": "http://unitsofmeasure.org",
              "code": "%"
            }
          }
        ],
        "component": [
          {
            "code": {
              "coding": [
                {
                  "system": "http://loinc.org",
                  "code": "3151-8",
                  "display": "Inhaled oxygen flow rate"
                }
              ],
              "text": "Inhaled oxygen flow rate"
            },
            "valueQuantity": {
              "value": 6,
              "unit": "liters/min",
              "system": "http://unitsofmeasure.org",
              "code": "L/min"
            }
          },
```

```
          {
            "code": {
              "coding": [
                {
                  "system": "http://loinc.org",
                  "code": "3150-0",
                  "display": "Inhaled Oxygen concentration"
                }
              ],
              "text": "Inhaled Oxygen concentration"
            },
            "valueQuantity": {
              "value": 21,
              "unit": "%",
              "system": "http://unitsofmeasure.org",
              "code": "%"
            }
          }
        ]
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/PO-10"
          }
        ],
        "recorded": "2022-11-29T22:40:17-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
```

```
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Smoking Status
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=72166-2&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier

	• _revinclude, code & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/SS-21",
      "resource": {
        "resourceType": "Observation",
        "id": "SS-21",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
smokingstatus"
          ],
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Somking Status Example"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "social-history",
                "display": "Social History"
              }
            ],
            "text": "Social History"
          }
```

```
        ],
        "code": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "72166-2",
              "display": "Tobacco smoking status"
            }
          ],
          "text": "Tobacco smoking status"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-05-07T00:00:00+04:00",
        "valueCodeableConcept": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "428041000124106",
              "display": "Current every day smoker"
            }
          ],
          "text": "Current every day smoker"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/SS-21"
          }
        ],
        "recorded": "2022-11-29T22:40:22-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
```

```
                    "code": "author"
                  }
                ]
              },
              "who": {
                "reference": "Practitioner/2"
              },
              "onBehalfOf": {
                "reference": "Practitioner/2"
              }
            },
            {
              "type": {
                "coding": [
                  {
                    "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                    "code": "transmitter"
                  }
                ]
              },
              "who": {
                "reference": "Organization/1"
              },
              "onBehalfOf": {
                "reference": "Organization/1"
              }
            }
          ]
        }
      }
    ]
}
```


Sexual Orientation

HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=76690-7&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters

	• code & patient • code & patient=Patient/Identifier • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/SO-1564653",
      "resource": {
        "resourceType": "Observation",
        "id": "SO-1564653",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
observation-sexual-orientation"
          ],
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Sexual Orientation Example"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "social-history",
                "display": "Social History"
```

```
              }
            ],
            "text": "Social History"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "76690-7",
              "display": "Sexual orientation"
            }
          ],
          "text": "Sexual orientation"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2021-05-01T08:00:00+04:00",
        "valueCodeableConcept": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/v3-NullFlavor",
              "code": "ASKU",
              "display": "Asked but no answer"
            }
          ],
          "text": "Asked but no answer"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/SO-1564653"
          }
        ],
        "recorded": "2022-11-29T22:40:26-05:00",
        "agent": [
          {
            "type": {
```

```
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/742"
            },
            "onBehalfOf": {
              "reference": "Practitioner/742"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Head Circumference
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=9843-4&patient=HL7CONN1

Name	Value
accept	Bearer token

content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/HC-10",
      "resource": {
        "resourceType": "Observation",
        "id": "HC-10",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/vitalsigns"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
```

```
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "9843-4",
              "display": "Head Occipital-frontal circumference"
            }
          ],
          "text": "Head Circumference"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 51.2,
          "unit": "cm",
          "system": "http://unitsofmeasure.org",
          "code": "cm"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/HC-10"
          }
        ],
        "recorded": "2022-11-29T22:40:29-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
```

```
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Body Height

HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=8302-2&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient

	• code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/BH-1564655",
      "resource": {
        "resourceType": "Observation",
        "id": "BH-1564655",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/vitalsigns"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
```

```
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "8302-2",
              "display": "Body height"
            }
          ],
          "text": "Body height"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 4,
          "unit": "in",
          "system": "http://unitsofmeasure.org",
          "code": "[in_i]"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/BH-1564655"
          }
        ],
        "recorded": "2022-11-29T22:40:38-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
```

```
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


BMI
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=39156-5&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier

	• _revinclude, code & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/BMI-1564655",
      "resource": {
        "resourceType": "Observation",
        "id": "BMI-1564655",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/vitalsigns"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "39156-5",
              "display": "Body mass index (BMI) [Ratio]"
```

```
            }
          ],
          "text": "BMI"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 23.3,
          "unit": "kg/m2",
          "system": "http://unitsofmeasure.org",
          "code": "kg/m2"
        },
        "derivedFrom": [
          {
            "reference": "Observation/BH1564655",
            "display": "Body Height"
          },
          {
            "reference": "Observation/BW1564655",
            "display": "Body Weight"
          }
        ]
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/BMI-1564655"
          }
        ],
        "recorded": "2022-11-29T22:40:50-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
```

```
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Blood Pressure

HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=85354-9&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient

	• code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/BP-10",
      "resource": {
        "resourceType": "Observation",
        "id": "BP-10",
        "meta": {
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Blood Pressure Example"
            },
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-
description",
              "valueMarkdown": "This is a blood pressure example for the
*Vitalsigns Profile*."
            }
          ],
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-blood-
pressure"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "encounter": {
          "display": "Colonoscopy"
```

```
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "85354-9",
              "display": "Blood pressure panel with all children optional"
            }
          ],
          "text": "Blood pressure systolic and diastolic"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "performer": [
          {
            "reference": "https://fhirapi.endosoft.com/Practitioner/2"
          }
        ],
        "interpretation": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
                "code": "N",
                "display": "Low"
              }
            ],
            "text": "Low Normal"
          }
        ],
        "bodySite": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "368209003",
              "display": "Right Arm"
            }
          ]
```

```
        },
        "component": [
          {
            "code": {
              "coding": [
                {
                  "system": "http://loinc.org",
                  "code": "8480-6",
                  "display": "Systolic blood pressure"
                }
              ],
              "text": "Systolic blood pressure"
            },
            "valueQuantity": {
              "value": 109,
              "unit": "mmHg",
              "system": "http://unitsofmeasure.org",
              "code": "mm[Hg]"
            }
          },
          {
            "code": {
              "coding": [
                {
                  "system": "http://loinc.org",
                  "code": "8462-4",
                  "display": "Diastolic blood pressure"
                }
              ],
              "text": "Diastolic blood pressure"
            },
            "valueQuantity": {
              "value": 44,
              "unit": "mmHg",
              "system": "http://unitsofmeasure.org",
              "code": "mm[Hg]"
            }
          }
        ]
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
```

```
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/BP-10"
          }
        ],
        "recorded": "2022-11-29T22:40:55-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Imaging Result

HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?category=imaging&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • category & patient • category & patient=Patient/Identifier • Category, date & patient • Code & patient • Identifier • _revinclude, category & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "/Observation/IF-4",
      "resource": {
        "resourceType": "Observation",
        "id": "IF-4",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
observation-imaging"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
```

```
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "imaging",
                "display": "Imaging"
              }
            ],
            "text": "Imaging"
          }
        ],
        "code": {
          "text": "Findings",
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "18782-3",
              "display": "Radiology Study observation (narrative)"
            }
          ]
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "encounter": {
          "reference": "Encounter/1564718",
          "display": "GI"
        },
        "effectiveDateTime": "2022-11-10T00:00:00+00:00",
        "valueString": "LINES AND TUBES: None. \r\nLUNGS AND PLEURA: Clear
lungs. \r\nNormal pulmonary vascularity.\r\nNo pleural effusion.\r\nNo
pneumothorax. \r\nNo acute abnormality"
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
```

```
            "reference": "Observation/IF-4"
          }
        ],
        "recorded": "2022-11-29T22:41:05-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Clinical Test Result
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?category=clinical-test&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • category & patient • category & patient=Patient/Identifier • Category, date & patient • Code & patient • Identifier • _revinclude, category & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "/Observation/CR-305",
      "resource": {
        "resourceType": "Observation",
        "id": "CR-305",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
observation-clinical-test"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
```

```
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
observation-category",
                "code": "clinical-test",
                "display": "Clinical Test"
              }
            ],
            "text": "Clinical Test"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "37100-5",
              "display": "X-ray cervical"
            }
          ],
          "text": "X-ray cervical"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "encounter": {
          "reference": "Encounter/1564655"
        },
        "effectiveDateTime": "2022-11-14T11:41:14+04:00",
        "valueCodeableConcept": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "72171-2",
              "display": "Glucose tolerance 2 hours panel"
            }
          ],
          "text": "Glucose tolerance 2 hours panel"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
```

```
              }
            ],
            "reference": "Observation/CR-305"
          }
        ],
        "recorded": "2022-11-29T22:41:09-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/16"
            },
            "onBehalfOf": {
              "reference": "Practitioner/16"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Pediatric BMI for Age
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=59576-9&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/CHAGE-1564655",
      "resource": {
        "resourceType": "Observation",
        "id": "CHAGE-1564655",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/pediatric-bmi-for-
age"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>: Test
Patient Pediatric</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 2021-11-
09</p><p><b>Administrative Gender</b>: Male</p></div>"
        },
        "status": "final",
        "category": [
```

```
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "59576-9",
              "display": "Body mass index (BMI) [Percentile] Per age and sex"
            }
          ],
          "text": "BMI"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "encounter": {
          "display": "Colonoscopy"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 23.3,
          "unit": "%",
          "system": "http://unitsofmeasure.org",
          "code": "%"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/CHAGE-1564655"
```

```
          }
        ],
        "recorded": "2022-11-29T22:41:12-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Pediatric Head Occipital-frontal Circumference Percentile
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=8289-1&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/PC-10",
      "resource": {
        "resourceType": "Observation",
        "id": "PC-10",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/head-occipital-
frontal-circumference-percentile"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>: Test
Patient Pediatric</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 2021-11-
09</p><p><b>Administrative Gender</b>: Male</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
```

```
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "8289-1",
              "display": "Head Occipital-frontal circumference Percentile"
            }
          ],
          "text": "Head Occipital-frontal circumference Percentile"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 51.2,
          "unit": "%",
          "system": "http://unitsofmeasure.org",
          "code": "%"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/PC-10"
          }
        ],
        "recorded": "2022-11-29T22:41:16-05:00",
        "agent": [
          {
```

```
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Body Weight
HTTP verb: GET & POST

Syntax: <base url> + / Observation

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Observation?code=29463-7&patient=HL7CONN1

Name	Value

accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • code & patient • code & patient=Patient/Identifier • category & patient • Category, date & patient • Identifier • _revinclude, code & patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Observation?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Observation/BW-1564655",
      "resource": {
        "resourceType": "Observation",
        "id": "BW-1564655",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/vitalsigns"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-
category",
                "code": "vital-signs",
                "display": "Vital Signs"
```

```
              }
            ],
            "text": "Vital Signs"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "29463-7",
              "display": "Body Weight"
            }
          ],
          "text": "Body Weight"
        },
        "subject": {
          "reference": "Patient/HL7CONN1"
        },
        "effectiveDateTime": "2022-11-06T20:15:32+04:00",
        "valueQuantity": {
          "value": 136,
          "unit": "lbs",
          "system": "http://unitsofmeasure.org",
          "code": "[lb_av]"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Observation/BW-1564655"
          }
        ],
        "recorded": "2022-11-29T22:41:20-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
```

```
                    "code": "author"
                  }
                ]
              },
              "who": {
                "reference": "Practitioner/2"
              },
              "onBehalfOf": {
                "reference": "Practitioner/2"
              }
            },
            {
              "type": {
                "coding": [
                  {
                    "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                    "code": "transmitter"
                  }
                ]
              },
              "who": {
                "reference": "Organization/1"
              },
              "onBehalfOf": {
                "reference": "Organization/1"
              }
            }
          ]
        }
      }
    ]
}
```


MedicationRequest

An order or request for both supply of the medication and the instructions for administration of the medication to a patient. The resource is called "MedicationRequest" rather than "MedicationPrescription" or "MedicationOrder" to generalize the use across inpatient and outpatient settings, including care plans, etc., and to harmonize with workflow patterns. This resource covers all type of orders for medications for a patient. This includes inpatient medication orders as well as community orders.

HTTP verb: GET & POST

Syntax: <base url> + / MedicationRequest

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/MedicationRequest?intent=proposal&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Intent + Patient • Intent + patient=patient/identifier • Intent, patient & status • Identifier • _revinclude, intent & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "1",
  "type": "searchset",
  "total": "1",
  "link": [
    {
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/MedicationRequest?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/MedicationRequest/276",
      "resource": {
        "resourceType": "MedicationRequest",
        "id": "276",
        "meta": {
          "versionId": "0",
          "lastUpdated": "2022-11-29T22:39:35+04:00"
        },
        "status": "active",
        "intent": "proposal",
        "category": [
          {
            "coding": [
              {
                "system":
"http://terminology.hl7.org/CodeSystem/medicationrequest-category",
                "code": "outpatient",
                "display": "Outpatient"
              }
            ],
            "text": "Outpatient"
```

```
      }
    ],
    "medicationCodeableConcept": {
      "coding": [
        {
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "309311",
          "display": "cisplatin 1 MG/ML Injectable Solution"
        }
      ]
    },
    "reportedBoolean": false,
    "subject": {
      "reference": "Patient/HL7CONN1",
      "display": "Shepherd Meredith Lynn"
    },
    "encounter": {
      "reference": "Encounter/1564655"
    },
    "authoredOn": "2021-05-01T00:00:00+04:00",
    "requester": {
      "reference": "Practitioner/742",
      "display": "Kiki Bambrick"
    },
    "dosageInstruction": [
      {
        "text": "1,  MG",
        "timing": {
          "repeat": {
            "boundsPeriod": {
              "start": "2021-05-01T00:00:00+04:00"
            }
          }
        },
        "asNeededBoolean": false,
        "route": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "26643006",
              "display": "Oral"
            }
          ],
          "text": "Oral"
        },
        "doseAndRate": [
          {
            "doseQuantity": {
              "value": 1,
              "unit": "MG",
              "system": "http://unitsofmeasure.org",
              "code": "MG"
            }
          }
        ]
```

```
          }
        ]
      }
    }
  ]
}
```


Immunization

Describes the event of a patient being administered a vaccine or a record of an immunization as reported by a patient, a clinician, or another party.

The immunization resource is intended to cover the recording of current and historical administration of vaccines to patients across all healthcare disciplines in all care settings and all regions. This includes immunization of both humans and animals but does not include the administration of non-vaccine agents, even those that may have or claim to have immunological effects. While the terms "immunization" and "vaccination" are not clinically identical, for the purposes of the FHIR resources, the terms are used synonymously.

HTTP verb: GET & POST

Syntax: <base url> + / Immunization

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Immunization?patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Patient • Patient=Patient/Identifier • Identifier • _revinclude & patient
HTTP verb	POST
Parameters	_search
Response	
{ "resourceType": "Bundle", "id": "1", "type": "searchset", "total": "1", "link": [{	

```
      "relation": "self",
      "url": "https://fhirapi.endosoft.com/Immunization?patient=HL7CONN1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://fhirapi.endosoft.com/Immunization/4",
      "resource": {
        "resourceType": "Immunization",
        "id": "4",
        "status": "completed",
        "vaccineCode": {
          "coding": [
            {
              "code": "Hepatitis A, Adult"
            }
          ],
          "text": "Hepatitis A, Adult"
        },
        "patient": {
          "reference": "Patient/HL7CONN1"
        },
        "encounter": {
          "reference": "Encounter/1"
        },
        "occurrenceDateTime": "2022-11-03T01:35:00+04:00",
        "primarySource": true,
        "location": {
          "reference": "Location/LA"
        },
        "manufacturer": {
          "reference": "Organization/"
        },
        "lotNumber": "12457896",
        "expirationDate": "2022-11-03",
        "site": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/v3-ActSite",
              "code": "LA",
              "display": "Left arm"
            }
          ]
        },
        "statusReason": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "591000119102",
              "display": "Vaccine refused by patient (situation)"
            }
          ]
        },
        "route": {
          "coding": [
```

```
            {
              "system": "http://terminology.hl7.org/CodeSystem/v3-ActSite",
              "code": "IDINJ",
              "display": "Injection, intradermal"
            }
          ]
        },
        "doseQuantity": {
          "value": 1,
          "system": "http://unitsofmeasure.org",
          "code": "cc"
        },
        "performer": [
          {
            "function": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/v2-0443",
                  "code": "AP"
                }
              ]
            },
            "actor": {
              "reference": "Practitioner/U02"
            }
          }
        ],
        "note": [
          {
            "text": "Immunization Booster Dose"
          }
        ],
        "reasonCode": [
          {
            "coding": [
              {
                "system": "http://snomed.info/sct",
                "code": "429060002"
              }
            ]
          }
        ],
        "isSubpotent": true,
        "education": [
          {
            "documentType": "253088698300010311120702",
            "publicationDate": "2012-07-02",
            "presentationDate": "2022-11-03"
          }
        ],
        "programEligibility": [
          {
            "coding": [
              {
```

```
                "system": "http://terminology.hl7.org/CodeSystem/immunization-
program-eligibility",
                "code": "ineligible"
              }
            ]
          }
        ],
        "fundingSource": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/immunization-
funding-source",
              "code": "private"
            }
          ]
        }
      }
    }
  ]
}
```


CarePlan

Describes the intention of how one or more practitioners intend to deliver care for a particular patient, group, or community for a period, possibly limited to care for a specific condition or set of conditions.

Care Plans are used in many areas of healthcare with a variety of scopes. They can be as simple as a general practitioner keeping track of when their patient is next due for a tetanus immunization through to a detailed plan for an oncology patient covering diet, chemotherapy, radiation, lab work and counseling with detailed timing relationships, pre-conditions, and goals. They may be used in veterinary care or clinical research to describe the care of a herd or other collection of animals. In public health, they may describe education or immunization campaigns.

HTTP verb: GET & POST

Syntax: <base url> + / CarePlan

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/CarePlan?category=assess-plan&patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters

	• Category & Patient • Category and Patient=Patient/Identifier • Identifier • _revinclude, category & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "careplan-bundle",
  "entry": [
    {
      "fullUrl": "HL7CONN1",
      "resource": {
        "resourceType": "CarePlan",
        "id": "604",
        "meta": {
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Colonoscopy"
            },
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-
description",
              "valueMarkdown": "Colonoscopy"
            }
          ]
        },
        "text": {
          "status": "additional",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1960-02-
20</p><p><b>Administrative Gender</b>: F</p></div>"
        },
        "status": "active",
        "intent": "order",
        "category": [
          {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/core/CodeSystem/careplan-
category",
                "code": "assess-plan"
              }
            ]
          }
        ],
        "subject": {
          "reference": "Patient/HL7CONN1",
          "display": "Shepherd Meredith Lynn"
        }
```

```
      }
    }
  ]
}
```


CareTeam

The Care Team includes all the people and organizations who plan to participate in the coordination and delivery of care. Care Team is not limited to practitioners, but may include other caregivers such as family members, guardians, the patient themself, or others. The Care Team, depending on where used, may include care team members specific to a particular care plan, an episode, an encounter, or may reflect all known team members across these perspectives. An individual's CareTeam can be dynamic over time, such that there can be transience of team members, such as a rehabilitation team.

HTTP verb: GET & POST

Syntax: <base url> + / CareTeam

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/CareTeam?patient=HL7CONN1&status=proposed

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Patient & status • Patient=Patient/Identifier & status • Identifier • _revinclude, status & patient
HTTP verb	POST
Parameters	_search
Response	


```
{
  "resourceType": "Bundle",
  "id": "careteam-bundle",
  "entry": [
    {
      "resource": {
        "resourceType": "CareTeam",
        "id": "1564653",
        "meta": {
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "Kiki Bambrick"
```

```
            },
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-
description",
              "valueMarkdown": "Care team"
            }
          ],
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-careteam"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1960-02-
20</p><p><b>Administrative Gender</b>: F</p></div>"
        },
        "status": "proposed",
        "name": "US-Core example CareTeam",
        "subject": {
          "reference": "Patient/HL7CONN1",
          "display": "Shepherd Meredith Lynn"
        },
        "participant": [
          {
            "role": [
              {
                "coding": [
                  {
                    "system": "http://snomed.info/sct",
                    "code": "17561000",
                    "display": "Cardiologist"
                  }
                ]
              }
            ],
            "member": {
              "reference": "Practitioner/742",
              "display": "SYSDBA"
            }
          },
          {
            "role": [
              {
                "coding": [
                  {
                    "system": "http://snomed.info/sct",
                    "code": "116154003",
                    "display": "Patient (person)"
                  }
                ]
              }
            ],
            "member": {
```

```
              "reference": "Patient/HL7CONN1",
              "display": "Shepherd Meredith Lynn"
            }
          },
          {
            "role": [
              {
                "coding": [
                  {
                    "system": "http://snomed.info/sct",
                    "code": "133932002",
                    "display": "Care Giver"
                  }
                ]
              }
            ],
            "member": {
              "reference": "RelatedPerson/1",
              "display": "Test John"
            }
          }
        ]
      }
    }
  ]
}
```


Goal

Describes the intended objective(s) for a patient, group, or organization care, for example, weight loss, restoring an activity of daily living, obtaining herd immunity via immunization, meeting a process improvement objective, etc. A Goal in health care services delivery is generally an expressed desired health state to be achieved by a subject of care (or family/group) over a period or at a specific point of time. This desired target health state may be achieved because of health care intervention(s) or resulting from natural recovery over time.

HTTP verb: GET & POST

Syntax: <base url> + / Goal

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/Goal?patient=HL7CONN1

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET

Parameters	Supports multiple parameters • Patient • Patient=Patient/Identifier • Identifier • _revinclude & patient
HTTP verb	POST
Parameters	_search

Response


```
{
  "resourceType": "Bundle",
  "id": "careteam-bundle",
  "entry": [
    {
      "resource": {
        "resourceType": "Goal",
        "id": "1564718",
        "meta": {
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "1564718"
            },
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-
description",
              "valueMarkdown": "Patient is targeting a pulse oximetry of 92% and
a weight of 195 lbs 11/30/2022."
            }
          ],
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-goal"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "lifecycleStatus": "active",
        "description": {
          "text": "Patient is targeting a pulse oximetry of 92% and a weight of
195 lbs 11/30/2022."
        },
        "subject": {
          "reference": "Patient/HL7CONN1",
          "display": "Shepherd Meredith Lynn"
        },
        "target": [
          {
            "dueDate": "2022-11-30"
```

```
          }
        ]
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Encounter/1564718"
          }
        ],
        "recorded": "2022-11-29T22:39:32-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/2"
            },
            "onBehalfOf": {
              "reference": "Practitioner/2"
            }
          },
          {
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
```

```
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


ServiceRequest

A record of a request for service such as diagnostic investigations, treatments, or operations to be performed. ServiceRequest represents a proposal or plan or order for a service to be performed that would result in a Procedure or DiagnosticReport, which in turn may reference one or more Observations, which summarize the performance of the procedures and associated documentation such as observations, images, findings that are relevant to the treatment/management of the subject.

HTTP verb: GET & POST

Syntax: <base url> + / ServiceRequest

Parameters: Multiple parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/ServiceRequest?patient=HL7CONN1

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	Supports multiple parameters • Patient • Patient=Patient/Identifier • _id • Authored, category & patient • Code & patient • Category & patient • Identifier • _revinclude & patient
HTTP verb	POST
Parameters	_search
Response	
{ "resourceType": "Bundle", "id": "servicerequest-bundle",	

```
  "entry": [
    {
      "resource": {
        "resourceType": "ServiceRequest",
        "id": "287",
        "meta": {
          "extension": [
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-name",
              "valueString": "287"
            },
            {
              "url": "http://hl7.org/fhir/StructureDefinition/instance-
description",
              "valueMarkdown": "Assistance with application for food pantry
program"
            }
          ],
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
servicerequest"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"
        },
        "status": "active",
        "intent": "order",
        "category": [
          {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-tags",
                "code": "sdoh",
                "display": "SDOH"
              }
            ],
            "text": "Social Determinants Of Health"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "467771000124109",
              "display": "Assistance with application for food pantry program"
            }
          ]
        },
        "subject": {
```

```
          "reference": "Patient/HL7CONN1",
          "display": "Shepherd Meredith Lynn"
        },
        "occurrencePeriod": {
          "start": "2022-11-10",
          "end": "2022-11-10"
        },
        "authoredOn": "2022-11-10",
        "requester": {
          "reference": "Practitioner/9"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Provenance",
        "id": "1",
        "text": {
          "status": "generated",
          "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"
        },
        "target": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/StructureDefinition/targetElement",
                "valueUri": "n1"
              }
            ],
            "reference": "Patient/HL7CONN1"
          }
        ],
        "recorded": "2022-11-29T22:41:27-05:00",
        "agent": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/provenance-
participant-type",
                  "code": "author"
                }
              ]
            },
            "who": {
              "reference": "Practitioner/9"
            },
            "onBehalfOf": {
              "reference": "Practitioner/9"
            }
          },
          {
            "type": {
              "coding": [
```

```
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-
provenance-participant-type",
                  "code": "transmitter"
                }
              ]
            },
            "who": {
              "reference": "Organization/1"
            },
            "onBehalfOf": {
              "reference": "Organization/1"
            }
          }
        ]
      }
    }
  ]
}
```


Bulk Data Access

This implementation guide is intended to be used by developers of backend services (clients) and FHIR Resource Servers (e.g., EHR systems, data warehouses, and other clinical and administrative systems) that aim to interoperate by sharing large FHIR datasets. The guide defines the application programming interfaces (APIs) through which an authenticated and authorized client may request a Bulk Data Export from a server, receive status information regarding progress in the generation of the requested files, and retrieve these files. It also includes recommendations regarding the FHIR resources that might be exposed through the export interface.

The scope of this document does NOT include:

- A legal framework for sharing data between partners, such as Business Associate Agreements, Service Level Agreements, and Data Use Agreements, though these may be required for some use cases.
- Real-time data exchange
- Data transformations that may be required by the client
- Patient matching (although identifiers may be included in the exported FHIR resources)
- Management of FHIR groups (although some Bulk Data operations require a FHIR Group id, this guide does not specify how Group resources are created and maintained within a system)

Resources

AllergyIntolerance

HTTP verb: GET

Syntax: <base bulk url> + / allergyintolerance-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/allergyintolerance-bulkfile.ndjson

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	
{"resourceType":"AllergyIntolerance","id":"29","text":{"status":"generated","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"> Patient Name: HL7CONN1 Status: Active DOB: 1980-10-22 Administrative Gender: Male Marital Status: Legally Married "},"clinicalStatus":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical","code":"active"}]},"verificationStatus":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/allergyintolerance-verification","code":"confirmed"}]},"category":["medication"],"criticality":"low","code":{"coding":[{"system":"http://snomed.info/sct","code":"763875007","display":"sulfonamide antibacterial"}],"text":"sulfonamide antibacterial"},"patient":{"reference":"Patient/","display":"Shepherd Meredith Lynn"},"reaction":[{"manifestation":[{"coding":[{"system":"http://snomed.info/sct","code":"271807003","display":"skin rash"}],"text":"skin rash"}],"severity":"mild"}]}	

CarePlan
HTTP verb: GET

Syntax: <base bulk url> + / careplan-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/careplan-bulkfile.ndjson

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	

{"resourceType":"CarePlan","id":"604","meta":{"extension":[{"url":"http://hl7.org/fhir/StructureDefinition/instance-name","valueString":"Colonoscopy"},{"url":"http://hl7.org/fhir/StructureDefinition/instance-description","valueMarkdown":"Colonoscopy"}]},"text":{"status":"additional","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"> Patient Name: HL7CONN1 Status: Active DOB: 1960-02-20 Administrative Gender: F "},"status":"active","intent":"order","category":[{"coding":[{"system":"http://hl7.org/fhir/us/core/CodeSystem/careplan-category","code":"assess-plan"}]}],"subject":{"reference":"Patient/","display":"Shepherd Meredith Lynn"}}

CareTeam

HTTP verb: GET

Syntax: <base bulk url> + / careteam-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/careteam-bulkfile.ndjson

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	

{"resourceType":"CareTeam","id":"1564653","meta":{"extension":[{"url":"http://hl7.org/fhir/StructureDefinition/instance-name","valueString":"Kiki Bambrick"},{"url":"http://hl7.org/fhir/StructureDefinition/instance-description","valueMarkdown":"Care team"}],"profile":["http://hl7.org/fhir/us/core/StructureDefinition/us-core-careteam"]},"text":{"status":"generated","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"> Patient Name: HL7CONN1 Status: Active DOB: 1960-02-20 Administrative Gender: F "},"status":"active","name":"US-Core example CareTeam","subject":{"reference":"Patient/HL7CONN1","display":"Shepherd Meredith Lynn"},"participant":[{"role":[{"coding":[{"system":"http://snomed.info/sct","code":"17561000","display":"Cardiologist"}]}],"member":{"reference":"Practitioner/742","display":"SYSDBA"}},{"role":[{"coding":[{"system":"http://snomed.info/sct","code":"116154003","display":"Patient (person)"}]}],"member":{"reference":"Patient/HL7CONN1","display":"Shepherd Meredith Lynn"}},{"role":[{"coding":[{"system":"http://snomed.info/sct","code":"133932002","display":"Care Giver"}]}],"member":{"reference":"RelatedPerson/1","display":"Test John"}}]}

Condition

HTTP verb: GET

Syntax: <base bulk url> + / condition-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/condition-bulkfile.ndjson

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	
{"resourceType":"Condition","id":"16","clinicalStatus":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/condition-clinical","code":"resolved","display":"resolved"}]},"verificationStatus":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/condition-ver-status","code":"confirmed","display":"Confirmed"}]},"category":[{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/condition-category","code":"encounter-diagnosis","display":"Encounter Diagnosis"}]}],"severity":{"coding":[{"system":"http://snomed.info/sct","code":"6736007","display":"Moderate"}]},"code":{"coding":[{"system":"http://www.cms.gov/Medicare/Coding/ICD10/index.html","code":"E11.9","display":"Type 2 diabetes mellitus without complications"}]},"subject":{"reference":"Patient/HL7CONN1","display":"Shepherd Meredith Lynn"},"recordedDate":"2015-05-02T00:00:00.000-00:00","abatementDateTime":"2015-05-02T00:00:00.000-00:00","encounter":{"reference":"Encounter/0"},"recorder":{"reference":"Practitioner/742","display":"Kiki Bambrick"},"onsetDateTime":"2015-05-02"}

Device

HTTP verb: GET

Syntax: <base bulk url> + / device-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/device-bulkfile.ndjson

Name	Value
accept	Bearer token
content-type	application/json

HTTP verb	GET
Parameters	
Response	
{"resourceType":"Device","id":"9","meta":{"versionId":"1","lastUpdated":"2022-11-30T01:33:40+04:00"},"text":{"status":"generated","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"> Patient Name: HL7CONN1 Status: Active DOB: 1980-10-22 Administrative Gender: Male Marital Status: Legally Married "},"status":"active","manufacturer":"Man1","manufactureDate":"2018-01-01T00:00:00+04:00","expirationDate":"2019-01-01T00:00:00+04:00","serialNumber":"S123","modelNumber":"S123","distinctIdentifier":"789X561","lotNumber":"123456","deviceName":[{"name":"Long Implant Device - 12345678","type":"user-friendly-name"}],"udiCarrier":[{"deviceIdentifier":"234556","carrierHRF":"1721123408"}],"type":{"coding":[{"system":"http://snomed.info/sct","code":"14106009","display":"Cardiac pacemaker implant"}],"text":"Cardiac pacemaker implant"},"patient":{"reference":"Patient/HL7CONN1","display":"Shepherd Meredith Lynn"},"owner":{"display":"Model Clinic"}}	

DiagnosticReport

HTTP verb: GET

Syntax: <base bulk url> + / diagnosticreport-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/diagnosticreport-bulkfile.ndjson

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	
{"resourceType":"DiagnosticReport","id":"RAD-4","meta":{"profile":["http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-note"]},"text":{"status":"generated","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"> Patient Name: HL7CONN1 Status: Active DOB: 1980-10-22 Administrative Gender: Male Marital Status: Legally Married "},"status":"final","category":[{"coding":[{"system":"http://loinc.org","code":"LP29684-5","display":"Radiology"}],"text":"Radiology"}],"code":{"coding":[{"system":"http://loinc.org","code":"30746-2","display":"Portable XR Chest Views"}],"text":"Portable XR Chest Views"},"subject":{"reference":"Patient/HL7CONN1"},"encounter":{"reference":"Encounter/1564718"},"effectiveDateTime":"2022-11-10T00:00:00+00:00","issued":"2022-11-10T00:00:00+00:00","performer":[{"reference":"Practitioner/742"},{"reference":"Orga	

```
nization/"}],"result":[{"reference":"Observation/IF-
4","display":"Findings"},{"reference":"Observation/IM-
4","display":"Impression"},{"reference":"Observation/CR-300","display":"Clinical
Test
Result"}],"media":[{"link":{"reference":"DocumentReference/10","display":"Portable
XR Chest
Views"}}],"presentedForm":[{"contentType":"application/html","data":"PGRpdiB4bWxucz
0iaHR0cDovL3d3dy53My5vcmcvMTk5OS94aHRtbCI+PHA+PGI+UGF0aWVudDwvYj48L3A+PHA+PGI+TmFtZ
TwvYj46IEhMN0NPTk4xPC9wPjxwPjxiPlN0YXR1czwvYj46IEFjdGl2ZTwvcD48cD48Yj5ET0I8L2I+OiAx
OTgwLTEwLTIyPC9wPjxwPjxiPkFkbWluaXN0cmF0aXZlIEdlbmRlcjwvYj46IE1hbGU8L3A+PHA+PGI+TWF
yaXRhbCBTdGF0dXM8L2I+OiBMZWdhbGx5IE1hcnJpZWQ8L3A+PC9kaXY+"}]}
```


DocumentReference
HTTP verb: GET

Syntax: <base bulk url> + / documentreference-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/documentreference-bulkfile.ndjson

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	


```
{"resourceType":"DocumentReference","id":"19","meta":{"versionId":"1","lastUpdated"
:"2022-11-30T01:33:40+04:00"},"text":{"status":"generated","div":"<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>:
HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-
22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally
Married</p></div>"},"identifier":[{"system":"https://fhirapi.endosoft.com/enduid","
value":"https://fhirapi.endosoft.comcfb70a60-5397-4fc1-b788-
20e0c2a635f6"}],"status":"current","docStatus":"final","category":[{"coding":[{"sys
tem":"http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-
category","code":"clinical-note","display":"Clinical
Note"}],"text":"Unknown"}],"type":{"coding":[{"system":"http://loinc.org","code":"3
4117-2","display":"History and physical
note"}]},"subject":{"reference":"Patient/HL7CONN1","display":"Shepherd Meredith
Lynn"},"author":[{"reference":"Practitioner/2"}],"custodian":{"reference":"Organiza
tion/953"},"date":"2022-11-
02T00:00:00+04:00","content":[{"attachment":{"contentType":"text/plain","url":"http
s://fhirapi.endosoft.com","title":"History and physical note","creation":"2022-11-
02T00:00:00+04:00"},"format":{"system":"http://terminology.hl7.org/CodeSystem/data-
absent-
reason","code":"unknown","display":"Unknown"}}],"context":{"encounter":[{"reference
":"Encounter/1564655"}],"period":{"start":"2022-05-07T08:00:00+04:00","end":"2022-
05-07T08:00:00+04:00"}}}
```

Goal

HTTP verb: GET

Syntax: <base bulk url> + / goal-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/goal-bulkfile.ndjson

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	
{"resourceType":"Goal","id":"1564718","meta":{"extension":[{"url":"http://hl7.org/fhir/StructureDefinition/instance-name","valueString":"1564718"},{"url":"http://hl7.org/fhir/StructureDefinition/instance-description","valueMarkdown":"Patient is targeting a pulse oximetry of 92% and a weight of 195 lbs 11/30/2022."}],"profile":["http://hl7.org/fhir/us/core/StructureDefinition/us-core-goal"]},"text":{"status":"generated","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"> Patient Name: HL7CONN1 Status: Active DOB: 1980-10-22 Administrative Gender: Male Marital Status: Legally Married "},"lifecycleStatus":"active","description":{"text":"Patient is targeting a pulse oximetry of 92% and a weight of 195 lbs 11/30/2022."},"subject":{"reference":"Patient/HL7CONN1","display":"Shepherd Meredith Lynn"},"target":[{"dueDate":"2022-11-30"}]}	

Immunization

HTTP verb: GET

Syntax: <base bulk url> + / immunization-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/immunization-bulkfile.ndjson

Name	Value
accept	Bearer token
content-type	application/json

HTTP verb	GET
Parameters	
Response	
{"resourceType":"Immunization","id":"4","status":"completed","vaccineCode":{"coding":[{"code":"Hepatitis A, Adult"}],"text":"Hepatitis A, Adult"},"patient":{"reference":"Patient/HL7CONN1"},"encounter":{"reference":"Encounter/1"},"occurrenceDateTime":"2022-11-03T01:35:00+04:00","primarySource":true,"location":{"reference":"Location/LA"},"manufacturer":{"reference":"Organization/"},"lotNumber":"12457896","expirationDate":"2022-11-03","site":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/v3-ActSite","code":"LA","display":"Left arm"}]},"route":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/v3-ActSite","code":"IDINJ","display":"Injection, intradermal"}]},"doseQuantity":{"value":1,"system":"http://unitsofmeasure.org","code":"cc"},"statusReason":{"coding":[{"system":"http://snomed.info/sct","code":"591000119102","display":"Vaccine refused by patient (situation)"}]},"performer":[{"function":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/v2-0443","code":"AP"}]},"actor":{"reference":"Practitioner/U02"}}],"note":[{"text":"Immunization Booster Dose"}],"reasonCode":[{"coding":[{"system":"http://snomed.info/sct","code":"429060002"}]}],"isSubpotent":true,"education":[{"documentType":"253088698300010311120702","publicationDate":"2012-07-02","presentationDate":"2022-11-03"}],"programEligibility":[{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/immunization-program-eligibility","code":"ineligible"}]}],"fundingSource":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/immunization-funding-source","code":"private"}]}}	

MedicationRequest

HTTP verb: GET

Syntax: <base bulk url> + / medicationrequest-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/medicationrequest-bulkfile.ndjson

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	
{"resourceType":"MedicationRequest","id":"276","meta":{"extension":[{"url":"http://hl7.org/fhir/StructureDefinition/instance-description","valueMarkdown":"This is a uscore med1 example for the *US Core Medication Profile*."}],"profile":["http://hl7.org/fhir/us/core/StructureDefinition/us-core-medicationrequest"]},"status":"active","intent":"proposal","reportedBoolean":false,	

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"category":[{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/medicationrequest-
category","code":"outpatient","display":"Outpatient"}],"text":"Outpatient"}],"medicationCodeableConcept":{"coding":[{"system":"http://www.nlm.nih.gov/research/umls/rxnorm","code":"309311","display":"cisplatin 1 MG/ML Injectable
Solution"}]},"subject":{"reference":"Patient/HL7CONN1","display":"Shepherd Meredith Lynn"},"encounter":{"reference":"Encounter/1564655"},"authoredOn":"2021-05-01T00:00:00+04:00","requester":{"reference":"Practitioner/742","display":"Kiki Bambrick"},"dosageInstruction":[{"text":"1,
MG","timing":{"repeat":{"boundsPeriod":{"start":"2021-05-01T00:00:00+04:00"}}},"asNeededBoolean":false,"route":{"coding":[{"system":"http://snomed.info/sct","code":"26643006","display":"Oral"}],"text":"Oral"},"doseAndRate":[{"doseQuantity":{"value":1,"unit":"MG","system":"http://unitsofmeasure.org","code":"MG"}}]}]}
```


Observation
HTTP verb: GET

Syntax: <base bulk url> + / observation-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/observation-bulkfile.ndjson

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	


```
{"resourceType":"Observation","id":"IF-4","text":{"status":"generated","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Patient</b></p><p><b>Name</b>: HL7CONN1</p><p><b>Status</b>: Active</p><p><b>DOB</b>: 1980-10-22</p><p><b>Administrative Gender</b>: Male</p><p><b>Marital Status</b>: Legally Married</p></div>"},"status":"final","category":[{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/observation-category","code":"imaging","display":"Imaging"}],"text":"Imaging"}],"code":{"text":"Findings","coding":[{"system":"http://loinc.org","code":"18782-3","display":"Radiology Study observation (narrative)"}]},"subject":{"reference":"Patient/HL7CONN1"},"encounter":{"reference":"Encounter/1564718","display":"GI"},"effectiveDateTime":"2022-11-10T00:00:00+00:00","valueString":"LINES AND TUBES: None. \r\nLUNGS AND PLEURA: Clear lungs. \r\nNormal pulmonary vascularity.\r\nNo pleural effusion.\r\nNo pneumothorax. \r\nNo acute abnormality"}
```


Procedure
HTTP verb: GET

Syntax: <base bulk url> + / procedure-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/procedure-bulkfile.ndjson

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	
{"resourceType":"Procedure","id":"604","status":"completed","subject":{"reference":"Patient/HL7CONN1","display":"Shepherd Meredith Lynn"},"performedDateTime":"2022-05-07","code":{"coding":[{"system":"http://snomed.info/sct","code":"COLON","display":"Colonoscopy"}],"text":"Colonoscopy"}} {"resourceType":"Procedure","id":"605","status":"completed","subject":{"reference":"Patient/HL7CONN2","display":"Everyman Adam Joseph"},"performedDateTime":"2022-05-07","code":{"coding":[{"system":"http://snomed.info/sct","code":"COLON","display":"Colonoscopy"}],"text":"Colonoscopy"}}	

Encounter
HTTP verb: GET

Syntax: <base bulk url> + / encounter-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/encounter-bulkfile.ndjson

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	
{"resourceType":"Encounter","id":"1564655","text":{"status":"generated","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"> Patient Name: HL7CONN1 Status: Active DOB: 1980-10-22 Administrative Gender: Male Marital Status: Legally Married "},"identifier":[{"use":"temp","value":"Encounter_1564655","system":"urn:oid:0.1.2.3.4.5.6.7"}],"status":"arrived","location":[{"location":{"referenc	

```
e":"Practitioner/2","display":"Endovault Medical
Center"}}],"class":{"system":"http://terminology.hl7.org/CodeSystem/v3-
ActCode","code":"AMB","display":"ambulatory","userSelected":false},"period":{"start
":"2022-05-07T08:00:00+04:00","end":"2022-05-
07T08:00:00+04:00"},"priority":{"coding":[{"system":"http://snomed.info/sct","code"
:"17621005","display":"Normal"}]},"type":[{"coding":[{"system":"http://snomed.info/
sct","code":"11429006","display":"Consultation"}]}],"subject":{"reference":"Patient
/HL7CONN1","display":"Shepherd Meredith
Lynn"},"serviceProvider":{"reference":"Organization/"},"participant":[{"type":[{"co
ding":[{"system":"http://terminology.hl7.org/CodeSystem/v3-
ParticipationType","code":"PPRF","display":"primary
performer"}]}],"period":{"start":"2022-05-
07"},"individual":{"reference":"Practitioner/2","display":"SYSDBA
SYSDBA"}}],"hospitalization":{"dischargeDisposition":{"coding":[{"system":"http://w
ww.nubc.org/patient-discharge","code":"01","display":"Discharged to
Home"}]}},"reasonCode":[{"text":"Colonoscopy"}]}
```


Organization

HTTP verb: GET

Syntax: <base bulk url> + / organization-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/organization-bulkfile.ndjson

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	


```
{"resourceType":"Organization","id":"1","identifier":[{"use":"official","system":"h
ttp://hl7.org/fhir/sid/us-
npi","value":"1891072237"}],"type":[{"coding":[{"system":"http://terminology.hl7.or
g/CodeSystem/organization-type","code":"prov","display":"Healthcare
Provider"}]}],"active":true,"name":"Endovault Medical
Center","telecom":[{"system":"phone","value":"518-831-
8000","use":"work"}],"address":[{"use":"work","line":["135
Broadway"],"city":"Schenectady","postalCode":"12305","state":"NY","country":"US"}]}
{"resourceType":"Organization","id":"2","identifier":[{"use":"official","system":"h
ttp://hl7.org/fhir/sid/us-
npi","value":"1891072237"}],"type":[{"coding":[{"system":"http://terminology.hl7.or
g/CodeSystem/organization-type","code":"prov","display":"Healthcare
Provider"}]}],"active":true,"name":"Endovault Medical
Center","telecom":[{"system":"phone","value":"313-333-
1111","use":"work"}],"address":[{"use":"work","line":["980 Patient Hospital
Street"],"city":"Detroit","postalCode":"48275","state":"MI","country":"US"}]}
```

Practitioner

HTTP verb: GET

Syntax: <base bulk url> + / practitioner-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/practitioner-bulkfile.ndjson

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	


```
{"resourceType":"Practitioner","id":"2","meta":{"extension":[{"url":"http://hl7.org
/fhir/StructureDefinition/instance-name","valueString":"Practitioner 1
Example"}],"profile":["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
practitioner"]},"identifier":[{"system":"http://hl7.org/fhir/sid/us-
npi","value":"1234567A"}],"active":true,"name":[{"use":"official","family":"SYSDBA"
,"given":["SYSDBA"],"suffix":["Dr."]}],"gender":"male","telecom":[{"system":"phone"
,"value":"5188318000","use":"work"}],"address":[{"use":"home","line":["135,
Broadway"],"city":"NY","state":"NY","postalCode":"12345","country":"US","type":"pos
tal"}]}
{"resourceType":"Practitioner","id":"742","meta":{"extension":[{"url":"http://hl7.o
rg/fhir/StructureDefinition/instance-name","valueString":"Practitioner 1
Example"}],"profile":["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
practitioner"]},"identifier":[{"system":"http://hl7.org/fhir/sid/us-
npi","value":"857462813"}],"active":true,"name":[{"use":"official","family":"Bambri
ck","given":["Kiki"],"suffix":["Dr."]}],"gender":"male","telecom":[{"system":"phone
","value":"(206) 555-7652","use":"work"}],"address":[{"use":"home","line":["100
Path
Way"],"city":"Seattle","state":"WA","postalCode":"98101","country":"US","type":"pos
tal"}]}
```


Provenance

HTTP verb: GET

Syntax: <base bulk url> + / provenance-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/provenance-bulkfile.ndjson

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	


```
{"resourceType":"Provenance","id":"1","text":{"status":"generated","div":"<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"},"target":[{
"extension":[{"url":"http://hl7.org/fhir/StructureDefinition/targetElement","valueU
ri":"n1"}],"reference":"Practitioner/2"}],"recorded":"2022-11-30T01:33:43-
05:00","agent":[{"type":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem
/provenance-participant-
type","code":"author"}]},"who":{"reference":"Practitioner/2"},"onBehalfOf":{"refere
nce":"Practitioner/2"}},{"type":{"coding":[{"system":"http://hl7.org/fhir/us/core/C
odeSystem/us-core-provenance-participant-
type","code":"transmitter"}]},"who":{"reference":"Organization/"},"onBehalfOf":{"re
ference":"Organization/"}}]}
{"resourceType":"Provenance","id":"1","text":{"status":"generated","div":"<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Provenance</b></p></div>"},"target":[{
"extension":[{"url":"http://hl7.org/fhir/StructureDefinition/targetElement","valueU
ri":"n1"}],"reference":"Practitioner/742"}],"recorded":"2022-11-30T01:33:43-
05:00","agent":[{"type":{"coding":[{"system":"http://terminology.hl7.org/CodeSystem
/provenance-participant-
type","code":"author"}]},"who":{"reference":"Practitioner/742"},"onBehalfOf":{"refe
rence":"Practitioner/742"}},{"type":{"coding":[{"system":"http://hl7.org/fhir/us/co
re/CodeSystem/us-core-provenance-participant-
type","code":"transmitter"}]},"who":{"reference":"Organization/"},"onBehalfOf":{"re
ference":"Organization/"}}]}
```


ServiceRequest
HTTP verb: GET

Syntax: <base bulk url> + / servicerequest-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/servicerequest-bulkfile.ndjson

Name	Value
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	

{"resourceType":"ServiceRequest","id":"287","meta":{"extension":[{"url":"http://hl7.org/fhir/StructureDefinition/instance-name","valueString":"287"},{"url":"http://hl7.org/fhir/StructureDefinition/instance-description","valueMarkdown":"Assistance with application for food pantry program"}],"profile":["http://hl7.org/fhir/us/core/StructureDefinition/us-core-servicerequest"]},"text":{"status":"generated","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"> Patient Name: HL7CONN1 Status: Active DOB: 1980-10-22 Administrative Gender: Male Marital Status: Legally Married "},"status":"active","intent":"order","category":[{"coding":[{"system":"http://hl7.org/fhir/us/core/CodeSystem/us-core-tags","code":"sdoh","display":"SDOH"}],"text":"Social Determinants Of Health"}],"code":{"coding":[{"system":"http://snomed.info/sct","code":"467771000124109","display":"Assistance with application for food pantry program"}]},"subject":{"reference":"Patient/","display":"Shepherd Meredith Lynn"},"occurrencePeriod":{"start":"2022-11-10","end":"2022-11-10"},"authoredOn":"2022-11-10","requester":{"reference":"Practitioner/9"}}

RelatedPerson
HTTP verb: GET

Syntax: <base bulk url> + / relatedperson-bulkfile.ndjson

Parameters: No parameters

Authorization: Bearer token

Example

https://fhirapi.endosoft.com/bulk/relatedperson-bulkfile.ndjson

Name	**Value**
accept	Bearer token
content-type	application/json
HTTP verb	GET
Parameters	
Response	
{"resourceType":"RelatedPerson","id":"1","meta":{"extension":[{"url":"http://hl7.org/fhir/StructureDefinition/instance-name","valueString":"Patient NOK"},{"url":"http://hl7.org/fhir/StructureDefinition/instance-description","valueMarkdown":"Care team"}],"profile":["http://hl7.org/fhir/us/core/StructureDefinition/us-core-relatedperson"]},"text":{"status":"generated","div":"<div xmlns=\"http://www.w3.org/1999/xhtml\"> Patient Name: HL7CONN1 Status: Active DOB: 1980-10-22 Administrative Gender: Male Marital Status: Legally Married "},"active":true,"patient":{"reference":"Patient/HL7CONN1","display":"Shepherd Meredith Lynn"},"relationship":[{"coding":[{"system":"http://terminology.hl7.org/CodeSystem/v3-RoleCode","code":"UNCLE","display":"Uncle"}]}],"name":[{"use":"official","family":"Test","given":["John"]}],"telecom":[{"system":"phone","value":"518	

```
8318000","use":"home"},{"system":"email","value":"nok@endosoft.com","use":"home"}],
"birthDate":"2000-01-01","address":[{"use":"home","line":["135
Broadway"],"city":"Schenectady","state":"NY","postalCode":"12305"}]}
```


US Core Implementation Guide

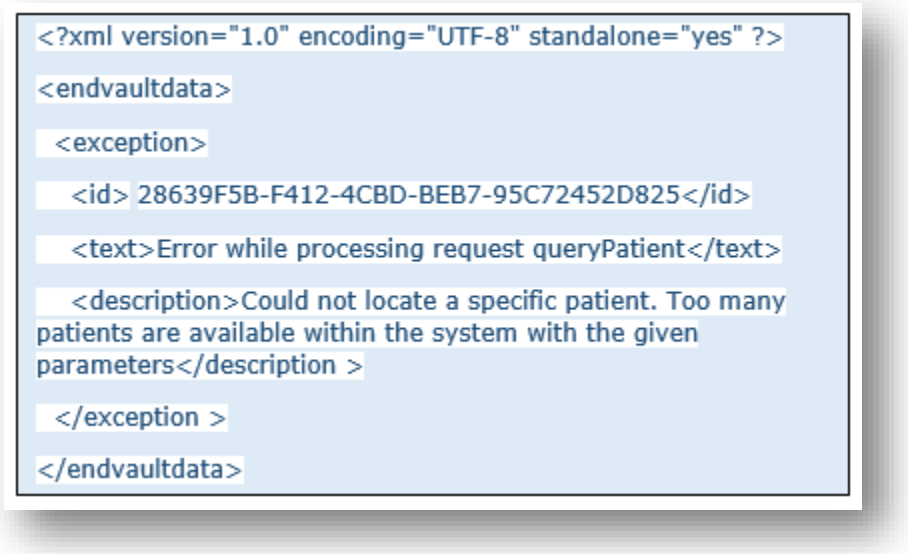
The module supports the HL7 FHIR US Core Implementation Guide STU 6.1.0 for its standardized FHIR API capabilities.

The module implements the applicable US Core profiles, required data elements, Must Support elements, and mandatory search capabilities necessary to provide access to the supported patient data through the FHIR API.

The FHIR API is based on HL7 FHIR Release 4 (R4), Version 4.0.1.

Exception Handling

EndoVault API is capable to handle any kind of exception and in the event of an exception, an XML based result will be generated and send back with the exception details.



```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
<endvaultdata>
  <exception>
    <id> 28639F5B-F412-4CBD-BEB7-95C72452D825</id>
    <text>Error while processing request queryPatient</text>
    <description>Could not locate a specific patient. Too many
patients are available within the system with the given
parameters</description >
  </exception >
</endvaultdata>
```

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
<endvaultdata>
  <exception>
    <id> 28639F5B-F412-4CBD-BEB7-95C72452D825</id>
    <text>Error while processing request queryPatient</text>
    <description>Unhandled type of exception
happened.</description >
  </exception >
</endvaultdata>
```

EndoVault API resources

Table 4-1 lists the EndoVault API resources.

Resources

REST Resource	Description
/	Resource base
/Patient	Return the patient information based on the search parameters
/AllergyIntolerance	Return the allergy intolerance information of a patient based on the search parameters
/Careplan	Return the care plan information of a patient based on the search parameters
/CareTeam	Return the care team information of a patient based on the search parameters
/Condition	Return the condition information of a patient based on the search parameters
/Device	Return the device information of a patient based on the search parameters
/DiagnosticReport	Return the diagnostic reports of a patient based on the search parameters
/DocumentReferences	Return the document reference of a patient based on the search parameters
/Goal	Return the care plan goal information of a patient based on the search parameters
/Immunization	Return the immunization information of a patient based on the search parameters
/MedicationRequest	Return the medication information of a patient based on the search parameters

/Observation	Return the observations of a patient based on the search parameters
/Procedure	Return the procedure information of a patient based on the search parameters
/Encounter	Return the encounter information of a patient based on the search parameters
/ServiceRequest	Return the service information of a patient based on the search parameters
/version	Return the API version

Table 4-1

API Rate and Quota

EndoVault limits the rate of requests coming to the server from same source to provide best and equal performance to all clients connected to the server. EndoVault API has a default quota of 60 requests per minute. However, this quota can be changed by EndoSoft support team up on request.

Examples

Example1:

Searching for patients, MRN starting with "STAGE3-G9"

https://evapistaging.endosoft.com/querypatient?mrn=U1RBR0UzLUc5Kg==

Example2:

Get the patient summary for patient MRN: "STAGE3-G9-A1-191"

https://evapistaging.endosoft.com/querysummary?mrn=U1RBR0UzLUc5LUExLTE5MQ==

Example3:

Query Sections (Demographics, Encounters, Allergies) for Patient MRN "STAGE3-G9-A1-191"

https://evapistaging.endosoft.com/querysections?mrn=U1RBR0UzLUc5LUExLTE5MQ==&sections=RGVtb2dyYXBoaWNzfEVuY291bnRlcnN8QWxsZXJnaWVz

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