

# Interoperability Product Documentation

Release 5.90.002.002 - Default IDP Edition  
March 2022

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# Using the Developer Portal

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This section provides details for accessing and using the Developer Portal user interface.

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# Start Here

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## Welcome to the API Developer Portal!

Here you can learn the capabilities of the Developer Portal and our FHIR APIs, and get started on building FHIR-based applications.

## FAQs for Developers

**What all can I do?** You can explore APIs, sign up for an account and log in. After login, you can request a subscription key to gain access to one or more APIs. Once you have a subscription key, you can view and test APIs against mock data using the API Sandbox. More importantly, you can download a "swagger" file to get a start on building applications.

**What's the API Sandbox?** The API Sandbox is a canned collection of desensitized, non-PHI test data which API endpoints can access for test purposes.

**Do I have to sign up?** Yes, you really should sign up for an account. Without it, all you can do is read Home page content, read about API endpoints, and follow footer links.

## Launching the Developer Portal

*To launch the Developer Portal:*

1. Launch the Developer Portal using the URL specific for your health plan. The Home page of the Developer Portal appears.
2. Scroll down the page to read about the APIs and profiles supported by your health plan.
3. From here you can:
  - a. [View the available API endpoints.](#)
  - b. If the client is using the default (Out of Box) Identity Provider (IDP), [sign up for a developer account.](#)
  - c. If the client is using a custom IDP, refer to the sign up documentation for their IDP.
  - d. Sign in if you already have an account.
4. To see a complete list of steps on how to use the Developer Portal, see the [Quick Start Guide.](#)

## Supported Browsers

**Table 1. Supported Browsers**

Browser	Supported
Apple Safari	Yes <sup>1</sup>
Google Chrome	Yes <sup>1</sup>
Microsoft Edge	Yes <sup>1</sup>
Microsoft Internet Explorer	No
Mozilla Firefox	Yes <sup>1</sup>

<sup>1</sup> Supported in the two latest production versions.

The Developer Portal is available from any operating system.

## API Sandbox Testing Information and Dataset

See [API Sandbox Test Data](#).



# API Sandbox Test Data

Sandbox test data is available and the same for all tenants and clients. This is the out-of-box “sandbox” test data.

## FHIR Adapter

/Patient/158601
/Patient?identifier=FACETS:tenant4 158601
/Claim/HSD000162900
/Claim?identifier=FACETS:tenant4%7CHSD000162900
/Claim?patient=158601&status=active
/Claim?patient=158601
/Practitioner/IHMPRAC00005
/Practitioner?identifier=http://hl7.org/fhir/sid/us-npi%7C0012016603
/PractitionerRole?practitioner=IHMPRAC00005
/HealthcareService?identifier=FACETS:tenant4%7C500171717001
/ExplanationOfBenefit/04162BM00003
/ExplanationOfBenefit?identifier=FACETS:tenant4%7C04162BM00003
/ExplanationOfBenefit?patient=158601
/ExplanationOfBenefit?patient=158601&status=active
/Location?provider=IHMPRAC00005
/Location?provider=IHMPRAC00005&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Location
/Location?identifier=FACETS:tenant4%7CIHMRAC00005
/Location?identifier=FACETS:tenant4%7CIHMPRAC00005&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Location
/Organization/500101010
/Organization?name=Medical%20Practice%20Associates
/Organization/10040410
/Organization?name=Wyoming%20Department%20of%20Health

/Organization?name=Wyoming%20Department%20of%20Health&\_profile=http://hl7.org/fhir/us/car  
/StructureDefinition/car-in-bb-organization

/Organization?name=FHFSA302

/Organization?name=FHFSA302&\_profile=http://hl7.org/fhir/us/car/StructureDefinition/car-in-bb-organization

/OrganizationAffiliation?identifier=383621801

/InsurancePlan?identifier=P2HR

/Endpoint/OrganizationAffiliation

/Endpoint?name=Practitioner

## Data Hub

Type	Entity	Get Statement
Allergy intoler Patient	Atp07	/AllergyIntolerance?patient=Ptp07
CarePlan Patient	Cpp07	/CarePlan?patient=Ptp07
CareTeam Patient	Ctp07	/CareTeam?patient=Ptp07&status=active
Claim Patient	Clmp07	/Claim?patient=Ptp07
Condition Patient	Conp07	/Condition?patient=Ptp07&category=[system]][[code]
Coverage Patient	Covp07	/Coverage?patient=Ptp07
Device Patient	Devp07	/Device?patient=Ptp07
DiagnosticReport Patient	Drepp07	/DiagnosticReport?patient=Ptp07
DocumentReference Patient	Docrefp07	/DocumentReference/Docrefp07
Encounter /Id	Encp07	/Encounter?_id=Encp07
End Point	Epp07	/Endpoint?identifier=http://terminology.hl7.org/CodeSystem/v2-0203 TAX
EOB Patient	Eobp07	/ExplanationOfBenefit?patient=Ptp07
Goal Patient	Goalp07	/Goal?patient=Ptp07
Immunization Patient	Immp07	/Immunization?patient=Ptp07
List	Listp07	List?identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier Listp07
Location identifier	Locp07	/Location?name=Locname01&_profile=http://hl7.org/fhir/us/core /StructureDefinition/us-core-location
Medication identifier	Medp07	/Medication?code=http://www.nlm.nih.gov/research/umls/rxnorm 103086

MedicationDispense	Mdp07	/MedicationDispense?patient=Ptp07&status=completed
MedicationKnowledge	Mkp07	/MedicationKnowledge?code=http://www.nlm.nih.gov/research/umls/rxnorm Mkp07
Medication Request Patient	Mrp07	/MedicationRequest?patient=Ptp07&intent=order&status=active code
Observation Patient	Obsp07	[base]/Observation?patient=Ptp07&code=http://loinc.org 2075-0
Organization identifier	Orgp07	/Organization/Orgp07
PatientID	Ptp07	/Patient/Ptp07
PracRole identifier	Pracrolep07	/PractitionerRole?specialty=http://snomed.info/sct 9632001
PractitionerID	Pracp07	/Practitioner/Pracp07
Procedure Patient	Procp07	/Procedure?patient=Ptp07
RelatedPerson	Rpp07	/RelatedPerson?patient=Ptp07

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# Working with Products

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The Developer Portal provides access to interoperability API products used for healthcare application development. Typically there are products for Data Hub APIs and Adapter APIs, and there are sandbox products.

You have to be logged into your account to see the Products page.

## Viewing a List of Products

The Products page displays a list of interoperability products that are available for application development.

*To view a list of products:*

1. After logging in, click **Products** in the top navigation menu to open the Products page.
2. In the list of products, view the names of the products and read their descriptions.
3. From here you can select a product from the list to see details.

## Viewing Details about a Product

1. With the product list showing, click a product name in the Name column. The Product page appears for the selected product.
2. If the product list is long, you can search for products by name or partial name.
3. On the Product page, you can:
  - See your subscriptions for that product
  - Request a product subscription for that product
  - View a list of APIs contained in the product
  - Navigate to an API page
  - Select a different product.

## Working with Subscriptions

For details on working with product subscriptions, see [Requesting a Product Subscription](#).


## Viewing a List of APIs in a Product

At the bottom of the Product page is a list of APIs contained in the product. The list shows the API name and a description. The name is clickable and takes you to the API page for the selected API.

# Viewing API Endpoints

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You can view API endpoints (or calls) whether you are signed in or not. The **APIs** page lets a developer explore portal functionality, input parameters and output responses.

 Sign in to try an API call

You have to be signed in to try an API call and receive valid data in return.

*To view API endpoints:*

1. Launch the Developer Portal as described in [Start Here](#).
2. On the Home page, click **Explore APIS**. You can also click the **APIs** top menu item.
3. The APIs page appears. Click the name of an API from the **Name** list.
4. The details page for the selected API appears. Here you can see the list of endpoints and all the in-page documentation for the selected endpoint.


 **NOTE:** You must be signed in to use the **Try It** button.

5. Try grouping the APIs by tag by selecting the **Group By Tag** button. The list updates to show endpoints listed by tag category.

From here you can try calling an endpoint using the **Try It** feature once you are signed in.

# Signing up for Developers

There are a couple of ways to complete your registration: Client-initiated or directly through the Developer Portal.


 Both of these methods are applicable only for default (Out of the Box) user registration and not for custom registration through an external Identity Provider.

## Developer Portal Sign-up

*To complete the signup process for a Developer Portal account:*

1. After launching the Developer Portal as described in [Start Here](#), click **Sign up** in the top menu.
2. The Sign Up page appears:
3. Provide the following information:
  - a. Type in an **Email** address for the account.
  - b. Type a minimum eight-character **Password**. Type it again in the **Confirm password** field.
  - c. Type a **First** and **Last name**.
  - d. Enter the **Captcha** characters.
  - e. Click the Terms of Use **Show** link and read the Terms of Use, then click the **I agree to the Terms of Use** checkbox.
4. Click the **SIGN UP** button.
5. Wait for a confirmation email. When you receive the email, open it and click the link inside the email to confirm your registration.
6. Launch the Developer Portal again and click on the **Sign in** link as described in [Start Here](#).
7. At this point, your next step is to [request a subscription](#) to one of the FHIR products offered by your health plan.

## Client-initiated Email Signup and Registration

 Outgoing emails may be disabled if an external Identity Provider (IDP) is managing user accounts.

There may be times when a health plan wants to invite a developer or development company to join the Developer Portal.

*To complete the registration process from a client-initiated email:*

1. Open the email sent to you from the client. It provides a link to use to sign into the Developer Portal.
2. Click the link in the email you received to open the **Sign up** page.
3. Complete the following information:
  - a. Type a **Password**, and then type it again in the **Confirm password** field.
  - b. Click the **RESET** button.
  - c. Sign in to the Developer portal.

4. At this point, your next step is to [request a subscription](#) to one of the FHIR products offered by your health plan.

# Requesting a Product Subscription

This topic details how to obtain a subscription for a given API, what you can do with it, and where you can manage it.

## Subscription Keys

When you request a subscription, you are really requesting a subscription key that allows you to submit requests to the associated API endpoints and receive a valid response in return. Without a subscription key, API requests will fail.

 You must have an account before you can request a subscription.

A subscription key is actually two separate keys, a primary key and a secondary key. Typically only one key is used at a time, and the other one is held in reserve. After a certain amount of time (every couple of months or so, you decide), you can switch from using primary to secondary key (or vice versa), then regenerate the one that just went into reserve using the Regenerate link.

In the **Try It** tool, you can select either of the keys to use for the request.

You can view your subscription key in a number of places:

- On the [Product page](#) associated with the API (see below)
- On your [Profile page](#).

## Submitting a Subscription Request

These details assume you have signed up through an email sent by a client to view their APIs after you completed the [registration process](#).

*To submit a subscription request:*

1. Sign in to the Developer portal.
2. Click **Products** in the top menu.
3. Click one of the APIs in the **Name** column.
4. The API page for the selected API appears. Provide a name for your subscription and click the **SUBSCRIBE** button.
5. Your subscription will either be auto-approved or sent to health plan administrators for approval, depending on how your system is configured. In the latter case, you should find an email stating your subscription is being reviewed.
6. After your subscription has been approved by health plan administrators, an email appears in your inbox detailing your subscription details.
7. Your subscriptions are listed in your [Profile](#). It displays details of the subscription - name of subscription, date requested, and primary and secondary keys in X'd-out format until you click Show to see the actual value of the key.



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# Trying an API Call

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The Developer Portal provides a feature where you can try out API endpoints without having to use Postman or SoapUI to make the request. This section describes the "Try It" feature.

*To use the "Try It" feature to call an API endpoint:*

1. Navigate to the API Details page for an API.
2. Click an endpoint in the left column of the screen, view the input parameters, then click **Try It**.
3. The **Try It** panel pops out from the right. Fill in required input and header parameters. Select a patient ID from the **Patient ID** dropdown. Sample data is provided [in API Sandbox Test Data](#).
4. In the **Authorization** dropdown, select the **Authorization Code** option. This populates your token.
5. Scroll to the bottom of the **Try It** panel and click **Send**.
6. The HTTP response appears. Look for the return code; the "200 OK" means the request was successful.



The examples discussed here may differ from the sandbox environment for your system.

# Downloading a Swagger File

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This topic details accessing and using the developer portal in an authenticated (gated) flow.

## Downloading a "Swagger" File to Start Development

To get started with development, you can download an OpenAPI ([Swagger](#)) file for a subscribed API.

1. From the APIs page, click on a subscribed API.
2. Choose a download format from the **API Definition** list that fits your development model.
3. Check your Downloads folder for the file, or locate the file on your system. From there you can open the file in an application or in your IDE to start development.

## Example Patient Read Response

Example

```
{
  "resourceType": "Patient",
  "meta": {
    "profile": [
      "http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient"
    ]
  },
  "extension": [{
    "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-birthsex",
    "valueCode": "male"
  }],
  "identifier": [{
    "use": "official",
    "type": {
      "coding": [{
        "system": "http://terminology.tzflInterOp.com/CodeSystem/ValueSet/InterOp/INTMEMID",
        "version": "v001.001",
        "code": "INTMEMID",
        "display": "Member Internal ID",
        "userSelected": true
      }],
    }
  }]
```

```

    }},
    "text": "Member Internal ID"
  },
  "system": "FACETS:tenant4",
  "value": "158601",
  "assigner": {
    "display": "FACETS:tenant4"
  }
},
{
  "use": "official",
  "type": {
    "coding": [{
      "system": "http://terminology.tzflInterOp.com/CodeSystem/ValueSet/InterOp/MEMID",
      "version": "v001.001",
      "code": "MEMID",
      "display": "MemberId",
      "userSelected": true
    }],
    "text": "MemberId"
  },
  "system": "FACETS:tenant4",
  "value": "CORE-00",
  "assigner": {
    "display": "FACETS:tenant4"
  }
}
},
{
  "use": "official",
  "type": {
    "coding": [{
      "system": "http://terminology.tzflInterOp.com/CodeSystem/ValueSet/InterOp/SUBID",
      "version": "v001.001",
      "code": "SUBID",
      "display": "HeadOfHouse/SubscriberId",
      "userSelected": true
    }],
    "text": "HeadOfHouse/SubscriberId"
  },
  "system": "FACETS:tenant4",
  "value": "CORE",
  "assigner": {
    "display": "FACETS:tenant4"
  }
}
}],
"name": {
  "use": "official",
  "text": "SBSB CORE",
  "family": "CORE",
  "given": [
    "SBSB"
  ]
}

```

```
]
}],
"gender": "male",
"birthDate": "1950-01-01T00:00:00.0000000+00:00",
"address": [{
  "use": "home",
  "type": "both",
  "text": "SBSB ADDR1, SBSB ADDR2, SBSB ADDR3, Union, NJ, 07083",
  "line": [
    "SBSB ADDR1",
    "SBSB ADDR2",
    "SBSB ADDR3"
  ],
  "city": "Union",
  "district": "Union",
  "state": "NJ",
  "postalCode": "07083"
},
{
  "use": "work",
  "type": "both",
  "text": "SBSB ADDR1, SBSB ADDR2, SBSB ADDR3, Union, NJ, 07083",
  "line": [
    "SBSB ADDR1",
    "SBSB ADDR2",
    "SBSB ADDR3"
  ],
  "city": "Union",
  "district": "Union",
  "state": "NJ",
  "postalCode": "07083"
}
],
"maritalStatus": {
  "coding": [{
    "system": "http://terminology.tzflInterOp.com/CodeSystem/ValueSet/InterOp/MaritalStatus",
    "version": "v001.001",
    "code": "Unreported",
    "userSelected": true
  }],
  "text": "UNREPORTED"
}
}
```

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# Accessing Reports

The Reports page provides various types of visual presentations on API usage for the signed-in developer.

**Table 1. Breakdown of Reports**

Report Section	Description
API Calls	Provides a graph of Total, Successful, Failed and Blocked requests for the period of time selected by the buttons.
Data transfer	Shows a graph of the bandwidth usage over a selected period of time.
API response times	Shows a graph of response times comparing minimum, maximum and average times in milliseconds.
Products	Shows statistics on the number of successful, blocked, failed, other and total calls by product. Also shows average response time in milliseconds and bandwidth used in bytes.
Subscriptions	Shows statistics on the number of successful, blocked, failed, other and total calls by subscription. Also shows average response time in milliseconds and bandwidth used in bytes.
APIs	Shows statistics on the number of successful, blocked, failed, other and total calls by API. Also shows average response time in milliseconds and bandwidth used in bytes.
Operations	Shows statistics on the number of successful, blocked, failed, other and total calls by individual operation. Also shows average response time in milliseconds and bandwidth used in bytes.

To access reports:

1. Click the **Reports** top menu item. The Reports screen appears. It displays a row of buttons that let you filter the graph data. Last Hour, Today, Last 7 days, Last 30 days and Last 90 days are the filters, Last 7 days being the default.
2. Scroll down to see the graphs for API calls, Data transfer, and API response times.
3. Scroll farther down to see the tables showing the call statistics for Products, Subscriptions, APIs and Operations. You'll see statistics on successful calls, blocked calls, failed calls, average response time and bandwidth.
4. Pick a report timeframe. Choices are:
  - LAST HOUR
  - TODAY
  - LAST 7 DAYS (default)
  - LAST 30 DAYS
  - LAST 90 DAYS
5. Click on column heading links to sort the table.

# Viewing Your User Profile

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All the specifics of your Developer Portal account are listed on the Profile page. Here you can see account and subscription details, and manage various aspects of your profile.


## Getting to Your Profile

*To get to your profile:*

1. Once signed in, click **Profile** in the top menu.
2. The Profile page appears.
3. Scroll down to see the rest of the page and its two sections:
  - Account Details
  - Subscriptions

## Account Details

The Account Details section of the User Profile page shows the email address and full name used to create the account.

 For clients who are using the Out of Box Identity Provider (IDP), see the Account Management page for details on how to change your account details.

## Subscription Management

The Profile page lists all your subscriptions and its primary and secondary keys, along with the management actions available to you. For details on this, see "Subscription Keys" in the [Requesting a Product Subscription](#) topic.

## Managing the Key Values

The primary and secondary keys and values are listed, along with actions to show the encrypted values and regenerate a new key.

## Renaming a Subscription

*To change your subscription name:*

1. Click **Rename** for the subscription you want to rename. A field opens up where you can enter the new name. The Profile screen appears displaying the renamed subscription.
2. Click into the **Name** field and type a new name for the subscription.
3. Click **Save**. The Profile screen appears displaying the renamed subscription.




## Canceling a Subscription

*To cancel an active subscription:*

1. Click **Cancel** in the Action column for the subscription you want to cancel. The Profile screen appears displaying "Cancelled" in the **State** column, indicating the subscription is now cancelled.
2. To resubscribe, navigate to the [Products page](#) and submit a new subscription.

# Account Management

 The Account Management buttons are available only with default user management. If the health plan is using their own identify provider (IDP), these buttons will be hidden.

If so configured, you will see a row of buttons below the Account Details section of the Profile page. The buttons are **CHANGE NAME**, **CHANGE PASSWORD**, and **CLOSE ACCOUNT**.

## Changing the Name on the Account

*To change the name on your account:*

1. Click **CHANGE NAME**. The Account Details screen appears, showing the account's email address and providing fields to change the first and last names on the account.
2. Change your **First Name** or **Last Name** as needed.
3. Change your **First/Last Name**.
4. Click **SAVE**.

## Changing Your Password

*To change your password:*

1. Click **CHANGE PASSWORD**. The Change Password screen appears, where you see fields for the old **Password**, the **New Password** and **Confirm Password** as well as a Captcha.
2. Type your existing **Password**.
3. Type a **New Password**, and then type it again to confirm.
4. Complete the Captcha.
5. Click the **CHANGE** button.

## Closing Your Account

*To close your account:*

1. Click **CLOSE ACCOUNT**. The Close Account popup appears, where it explains what you are about to do and asks if you want to continue.
2. Click **OK** to close your Developer Portal account.

You will receive a "farewell" email on closing your account.

# Registering an Application through the Developer Portal

**Availability:** 5.80.003 or later

The Interoperability Developer Portal offers signed-in users a way to register a FHIR-based healthcare application. Applications can be registered in both Sandbox and Production environments - you register for Sandbox first to obtain the Application ID, then you register for Production using the App ID from Sandbox.

The registration flow can be configured on or off, and various aspects of the flow can be configured.

## Preparing to Register an Application

Before attempting to register an application, it's beneficial to gather your registration information and settings ahead of time. Here is a mini-checklist to guide you:

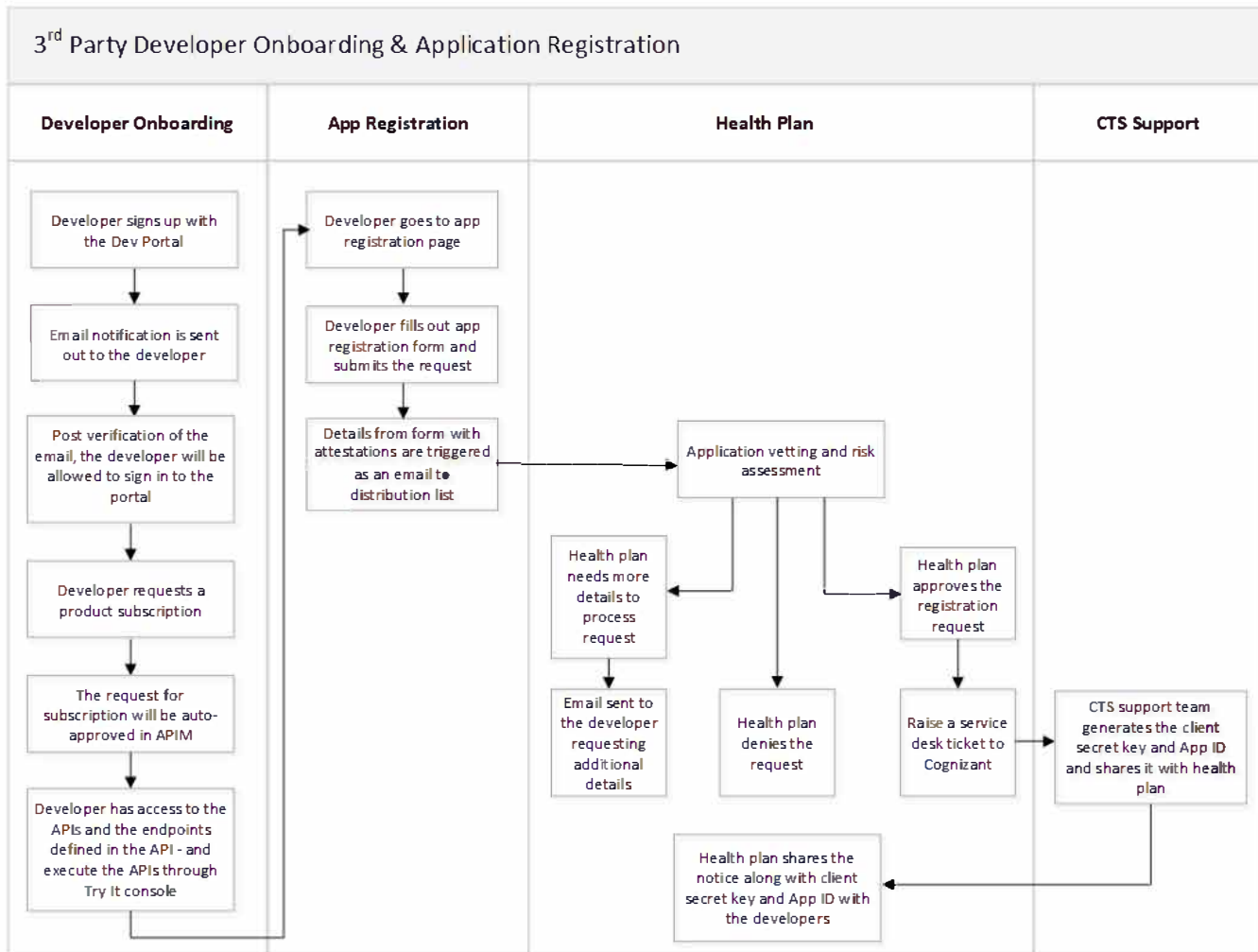
**Table 1. Checklist for Preparing to Register an Application**

Category	Description
Application ID	The number identifying the application. This ID is auto-generated during Sandbox registration and applied during Production registration.
OAuth redirection	Call back URL and Redirect URI.
OAuth type	Public vs. Confidential. <b>Confidential</b> applications can keep the client ID and client secret secure. <b>Public</b> applications cannot secure the data.
APIs to be accessed	Provider Directory API, Patient Access API, etc. Select all that apply.
IP address range	Range of IP addresses to whitelist
Method of encryption	Encryption support – TLS 1.2 or above. If TLS 1.1 or lower encryption is planned, the application could be denied.
Organizational details	Key website and legal URLs, support contacts, escalation contacts, and developer contacts
Attestation	Attest compliance with the security and privacy policy choices listed on the registration form. These choices ensure the application provides its own privacy policy and terms of use statements. If the developer does not agree to any of the statements, the health plan will notify members to avoid this application and select one that is in compliance.

You can now start the registration process as described in [Registering an Application](#) below.

## Configuring the Application Registration Flow

The application registration flow starts with a developer creating an account on the Developer Portal. The developer then initiates an application registration (Sandbox or Production), which includes an attestation that the application is in compliance with security and risk assessment principles. See diagram.



Optionally, the health plan may configure the flow to approve or deny the request.

If approved, the developer accesses the application's client ID and client secret on the Developer Portal. Then the application is ready to start accessing APIs.

## Registering an Application

To register an application:

1. Prepare for registering your application as described in [Preparing to Register an Application](#).
2. Sign in to the Developer Portal.
3. Fill in the application and organizational details as described in [Preparing to Register an Application](#).

4. On the Home page, click the **App Registration** button in the top menu.
5. The **Register New App** page appears. First off, select the **ENVIRONMENT FOR YOUR APP**. The **Sandbox** radio button is selected by default, because you must register the application in Sandbox before attempting a Production registration.

If you select **Sandbox**, you see fields for the **APP NAME** and **APP DESCRIPTION**. The API Sandbox is a canned collection of desensitized, non-PHI test data which API endpoints can access for test purposes.

But if you select **Production**, in addition to the **APP NAME** and **APP DESCRIPTION** fields, you see a text field for **TEST APP ID FOR YOUR APP**. This App ID (also known as client ID) is provided once the Sandbox registration is approved.

The remainder of the form is the same for either environment selection.

6. Fill in the application and organizational details as described in [Preparing to Register an Application](#).
7. Scroll further down and fill out the **ATTESTATION** section of the form. Be sure to check one or more of the Attestation checkboxes.
8. Click the **SUBMIT** button.

The health plan then reviews the request and either approves or denies it. You will receive an email either way.

If approved, you will receive the auto-generated App ID. You can go to the **Profile** page to see your application's information such as client ID and client secret. You can try testing a few APIs either in the **Try It** tool on the Developer Portal or through SoapUI or Postman. You can also download a swagger file to get going with development.

# Developer Portal FAQs for Health Plan Administrators

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You can also access additional FAQs from Microsoft here: <https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-developer-portal#cors>.

## 1 - How will third-party developers navigate to the Developer Portal?

The Developer Portal is a public facing internet page. During implementation, this URL is provided to you in case you want to enable a link on your own public-facing website to direct developers to the page. Alternatively, you can share the link in any other way if developers reach out to you directly. Developers can also search for the page using standard internet search engines.

## 2 - What can a developer do on the portal prior to registering?

After a developer navigates to the Developer Portal URL, they are introduced to the interoperability APIs and the categories of data they can access. In addition, they have the ability to view API documentation for all of the APIs that are offered through the API Gateway. This access also includes request parameters as well as sample data and responses that are viewable in a developer friendly format. After a developer reviews the available APIs, they can then initiate registration to begin their application development and testing.

## 3 - How does a developer register on the portal?

This can occur in two ways:

- You can automate the process automatically after a developer approaches you directly with a request to develop an application against your interoperability APIs. See [FAQ 5](#) for more detail.
- Developers navigate to the “Sign Up” link. There, developers can enter basic user information. After the request is submitted, the Developer Portal performs the following functions:
  - The Developer Portal automatically creates their user account.
  - The Developer Portal notifies the developer of the request and your approval process can then begin. See [FAQ 5](#) below for more detail.

There are APIs available to get information about third-party developers. This information includes a verified email address. There are also APIs available that create subscriptions and assign those to third-party developers.

## 4 - What does a developer do after they are registered?

After registration, a developer can request a subscription to a particular product (group of APIs). Then they can begin calling APIs against test data, and they can register their application and begin to build it.

## 5 - How do I approve a developer to allow them to begin developing an application against your interoperability APIs?

When either a developer approaches you directly with a request to develop, or we notify you during the developer registration process of a request from a developer, your approval process begins. You will approve the developer request following your pre-determined business process, which may include standard attestation statements such as how PHI data will be protected or what secondary usages of data may be. After your business process approves the developer request, you can automate that approval in the Developer Portal by calling an API that then completes the registration process for the developer. Alternatively, you can provide the developer with a subscription code specific to you that they can enter in the Developer Portal to gain access to your subscription and complete the registration and subscription assignment process.

## 6 - How does a developer manage their subscriptions?

Developers will most likely develop against multiple health plan interoperability APIs, since the APIs should be standard. Within the Developer Portal, developers can manage their subscriptions and develop applications against various health plans in a single place. They can manage their primary and secondary keys, regenerating as needed, and they can unsubscribe as well.

## 7 - How do I manage developers?

Previous questions have addressed directing developers to the Developer Portal as well as describing the way the developers will be approved to build applications against your APIs. However, if a developer's subscription needs to be suspended or removed for various reasons, the Developer Portal facilitates that process as well. After the developer's subscription to your APIs is removed, their application can no longer connect to the APIs. There are APIs available that allow for blocking and deleting user accounts. There are also APIs available that allow a client to remove subscriptions for a user account and remove the account from groups.

# Quick Start Guide

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## Try This and That

1. Start by launching the Developer Portal in a browser. The URL will be specific to your health plan.
2. On the Home page, scroll down to see more content.
3. Back at the top, click on the **Help** menu and explore the documentation links on the Help page.
4. Sign up for a Developer Portal account. Navigate to the **Sign Up** page, fill in the form and submit it, then follow the instructions in the email being sent to you.
5. Sign into the Developer Portal with your credentials.
6. Click the **Product** menu. On the Products page, select a sandbox product.
7. On the ensuing Product page, scroll down to see the APIs offered in that product.
8. Scroll back up and request a subscription:
  - a. Enter a subscription name of your choosing.
  - b. Click the **SUBSCRIBE** button.
9. Click on an API name such as "fhir-adapter-sandbox".
10. On the ensuing API page, scroll through the list of API calls and select the "Patient Read" API endpoint. Explore the description, input parameters and response.
11. Click the **Try It** button on the far right and select a patient ID from the Patient ID dropdown. Your subscription key for the selected product is automatically filled in, if you have one.
12. In the **Authorization** dropdown, select the **Authorization Code** option. This takes you to the IDP, where the token is generated and populated on the **Try It** page.
13. Scroll farther down the page and click the **SEND** button.
14. If the call succeeds, you'll see "200 OK" returned along with the data from the request.
15. While on the API page, you can download an OpenAPI ("swagger") file to get a start on your application development:
  - a. Choose a download format from the **API Definition** dropdown.
  - b. The swagger file is downloaded to the **Downloads** folder.

From there you can pull the downloaded file into Postman or your IDE to start development.



# Supported Profiles in the Data Hub

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## Supported Profiles Table

Detailed definitions for these profiles are located at the linked locations in the following table.

Resource and Wiki Reference Page Link	Use Case
<p><a href="#">Patient</a></p> <ul style="list-style-type: none"> <li>• CARIN</li> <li>• US Core</li> </ul>	<p>A member downloads a mobile application and authorizes it to access their member (patient) data on the member's behalf (so they can view it).</p> <p>When the member loads the patient screen in the mobile application UI, they enter a non-unique or family identifier and search for their unique Patient record. The UI calls an external endpoint, which then returns the patient data in an industry-standard format. The patient data is then translated by the mobile application for display to the member. The member now views their patient information in a user friendly way.</p>
<p><a href="#">Practitioner</a></p> <ul style="list-style-type: none"> <li>• US Core</li> <li>• Da Vinci</li> </ul>	<p>A mobile application is authorized to access a health plan's provider (practitioner) data. The application accepts input of Last Name and/or NPI and sends that to an external endpoint to retrieve the practitioner data.. The application could also allow selection of a specific practitioner from a list, thereby, calling the external endpoint with the practitioner ID.</p> <p>The practitioner data is then translated by the mobile application and viewed by the user..</p>
<p><a href="#">PractitionerRole</a></p> <ul style="list-style-type: none"> <li>• CARIN</li> <li>• US Core</li> <li>• Da Vinci</li> </ul>	<p>A member downloads a mobile application which can help search for information about a Practitioner's affiliation to other Facilities. The application accepts a member's input of Practitioner ID, and calls the Practitioner search resource. If Practitioner ID is not known, the mobile application implements the Practitioner Search to help locate the practitioner ID to search for Facility Affiliations.</p> <p>That call retrieves the bundle of Provider data and returns it in the industry-standard format. The list of Practitioners and their affiliations matching the input search criteria is then formatted for display in the mobile application.</p> <p>The member now views a list of practitioners and their affiliations in a user friendly way.</p>
<p><a href="#">Location</a></p> <ul style="list-style-type: none"> <li>• US Core</li> <li>• Da Vinci</li> </ul>	<p>The Location endpoint is used during other HL7 FHIR APIs to retrieve location information for a provider. Additionally, it can be called as a stand-alone API. When a user loads the location screen in the mobile application UI, the UI calls in to the external endpoint for the location.</p> <p>That call returns the location data in the industry-standard format where it is then translated by the mobile application for display.</p> <p>The user now views the location information in a user friendly way.</p>

<p><a href="#">Organization</a></p> <ul style="list-style-type: none"> <li>• CARIN</li> <li>• US Core</li> <li>• Da Vinci</li> </ul>	<p>A mobile application would be authorized to access a health plan's organization data for a provider, an employer (group), the Payer itself, or a network in order to display contact information for that organization.</p> <p>When a user loads the organization screen in the mobile application UI, the UI calls in to the external endpoint for the organization. That call retrieves the Organization data and returns it in the industry-standard format. The organization information is then translated by the mobile application for display in a user friendly way.</p>
<p><a href="#">R4 Claim</a></p>	<p>A member downloads a mobile application and authorizes it to access their claims data on their behalf (so they can view it). When the member loads the claim screen in the mobile application UI, the UI calls the external endpoint for the Claim.</p> <p>The application can either send in a Claim ID (identifier) to return just one claim, or a Patient ID to return all claims for the member.</p> <p>The claims data is then translated by the mobile application for display to the member.</p> <p>The member now views their claims information in a user friendly way.</p>
<p><a href="#">R4 Consent Profile</a></p>	
<p><a href="#">R4 MedicationDispense Profile</a></p>	<p>A member has been prescribed a medication. The prescription has been sent to their pharmacy. When the pharmacy system responds to the medication order for the member, the result is a medication dispense. The MedicationDispense is an event resource from the perspective of a FHIR workflow. It includes a description of the medication and instructions for administering the medication.</p>
<p><a href="#">US Core AllergyIntolerance Profile</a></p>	<p>A provider uses an application to retrieve the allergy and adverse reaction information for a patient. The application UI calls an external endpoint which returns the allergies and any adverse reactions associated with the patient in an industry-standard format. The application translates the information and displays it to the provider.</p>
<p><a href="#">US Core CarePlan Profile</a></p>	<p>A member accesses a mobile application to view their care plan set up by their provider for their condition, such as diabetes. The application UI calls an external endpoint which returns the care plan information, including the goal of the plan, and the team that is providing care to the member for this plan. The application translates the information and displays it to the member.</p>
<p><a href="#">US Core CareTeam Profile</a></p>	<p>The CareTeam endpoint is used by other HL7 FHIR APIs, such as the CarePlan endpoint, to retrieve information about the team of practitioners who provide care for a patient. Additionally, it can be called as a stand-alone API.</p>

US Core Condition Profile	A member uses a mobile application to retrieve their current and past conditions. The application UI calls an external endpoint which returns the conditions that meet the filters, such as the type of condition. The application translates the information and displays it to the member.
US Core DiagnosticReport Profile for Laboratory Results Reporting	<p>A member downloads a mobile application and authorizes it to access their member (patient) laboratory results data so they can view it.</p> <p>The UI calls an external endpoint, which then returns the laboratory result data in an industry-standard format.</p> <p>The laboratory result data is then translated by the mobile application for display to the member.</p> <p>The member now views their laboratory results in a user friendly way.</p>
US Core DiagnosticReport Profile for Report and Note exchange	A member accesses a mobile application and authorizes it to access their diagnostic reports related to their cardiac condition. The UI calls an external endpoint, which returns the diagnostic reports in an industry-standard format. The application translates the diagnostic report information and displays it to the member.
US Core DocumentReference Profile	A member has recently had an outpatient procedure performed. They want to review what the clinic told them about what activities they could do. The member accesses a mobile application which calls an external endpoint to gather the information the provider entered about their activity level after the procedure. The external endpoint returns the information in an industry-standard format. The application translates the information and displays it to the member.
US Core Encounter Profile	A member accesses a mobile application to find out information about their last visit with a particular doctor. The application UI calls an external endpoint which returns the encounter information in an industry standard format. The application translates the information and displays it to the member.
US Core Goal Profile	A member has diabetes and their provider has given them a goal of reducing their A1C blood sugar levels. The member accesses a mobile application to see how they are proceeding towards their goal. The application UI calls an external endpoint which returns the goal information in an industry-standard format. The application translates the information and displays it to the member.
US Core Immunization Profile	A parent has been asked by a practitioner to provide a list of immunizations that their child has received. The parent authorizes a mobile application to retrieve their child's immunization information. The application UI calls an external endpoint which returns the immunization information in an industry-standard format. The application then translates the data and displays it to the parent.
US Core Implantable Device Profile	A member has received a knee replacement and wants to see the type of device that was used. The member accesses a mobile application which calls an external endpoint. The endpoint returns the knee replacement device details in an industry-standard format. The application translates the information and displays it to the member.

<a href="#">US Core Laboratory Result Observation Profile</a>	The laboratory result observation profile represents an individual test and result, or a nested set of tests, such as microbial susceptibility panel. The DiagnosticReport endpoint is used to group and summarize these individual test results.
<a href="#">US Core Medication Profile</a>	A member uses a mobile application to find out information about medications that they are taking. The application UI calls an external endpoint which returns the medication information in an industry-standard format. The application translates the information and displays it to the member.
<a href="#">US Core MedicationRequest Profile</a>	A member has been prescribed a medication by their provider. They use a mobile application to request a refill of a medication they are currently taking. The application UI calls an external endpoint which sends the medication information in an industry-standard format. The application translates the information and displays it to the member.
<a href="#">US Core Pediatric BMI for Age Observation Profile</a>	A member accesses a mobile application to see how their baby is growing by looking at their body mass index and comparing it against the averages for their age. The application UI calls an external endpoint which returns the information in an industry-standard format. The application translates the information and displays it to the member.
<a href="#">US Core Pediatric Weight for Height Observation Profile</a>	A member accesses a mobile application to see how their baby is growing by looking at their weight and comparing it against the averages for their height and age. The application UI calls an external endpoint which returns the information in an industry-standard format. The application translates the information and displays it to the member.
<a href="#">US Core Procedure Profile</a>	A member uses a mobile application to see what procedures have already been performed for a condition for which they have sought treatment. The application UI calls an external endpoint which returns the procedure information associated with the member in an industry-standard format. The application translates the information and displays it to the member.
<a href="#">US Core Provenance Profile</a>	The Provenance resource is used to create an audit trail of changes. It tracks information about the activity that either created, revised, deleted, or signed each version of a resource. It includes the agents and entities involved in the change. This information can be used to access the trustworthiness or quality of the information. It can also provide pointers of how to further investigate the origins of the resource and the information contained within it.
<a href="#">US Core Pulse Oximetry Profile</a>	A member has their blood oxygen saturation levels regularly monitored by a provider using a pulse oximetry device. The member uses an application to retrieve information on their pulse oximetry readings. The application UI calls an external endpoint which returns the pulse oximetry information associated with the member in an industry-standard format. The application translates the information and displays it to the member.
<a href="#">US Core Smoking Status Observation Profile</a>	A member uses a mobile application to retrieve information on whether they are currently smoking or have smoked in the past. The application UI calls an external endpoint which returns the smoking status associated with the member in an industry-standard format. The application translates the information and displays it to the member.

US Core Vital Signs Profile	A member uses a mobile application to retrieve their blood pressure and heart rate readings at their last doctor visit. The application UI calls an external endpoint which returns those readings at their last visit in an industry-standard format. The application translates the information and displays it to the member.
CARIN-BB-Coverage	The coverage endpoint is used during other HL7 FHIR APIs to retrieve coverage (enrollment) information for a member. Additionally, it can be called as a stand-alone API. When a user loads the coverage screen in the mobile application UI, the UI calls in to the external endpoint for coverage. That call will retrieve the coverage data and return it in the industry-standard format where it is then translated by the mobile application for display. The user now views the coverage information in a user friendly way.
CARIN-BB ExplanationOfBenefit	A member downloads a mobile application and authorizes it to access their EOB data on the member's behalf (so they can view it). When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the EOB data and returns it in the industry-standard format . The EOB data is then translated by the mobile application for display to the member.
CARIN-BB ExplanationOfBenefit-Inpatient-Facility	A member downloads a mobile application and authorizes it to access their EOB data for their clams when they had services performed by a hospital, clinic, or other facility as an inpatient. . When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the inpatient EOB data and returns it in the industry-standard format . The EOB data is then translated by the mobile application for display to the member.
CARIN-BB-ExplanationOfBenefit-Outpatient-Facility	A member downloads a mobile application and authorizes it to access their EOB data for their clams when they had services performed by a hospital, clinic, or other facility as an outpatient. When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the outpatient EOB data and returns it in the industry-standard format . The EOB data is then translated by the mobile application for display to the member.
CARIN-BBExplanationOfBenefit-Pharmacy	A member downloads a mobile application and authorizes it to access their EOB data for their clams that were submitted by a retail pharmacy. When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the pharmacy EOB data and returns it in the industry-standard format . The EOB data is then translated by the mobile application for display to the member.

<a href="#">CARIN-BB-ExplanationOfBenefit-ProfessionalNonClinician</a>	<p>A member downloads a mobile application and authorizes it to access their EOB data for their claims that were submitted by a provider, supplier, or other non-institutional provider for either inpatient or outpatient services. When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the EOB data and returns it in the industry-standard format . The EOB data is then translated by the mobile application for display to the member.</p>
<a href="#">CARIN-BB RelatedPerson Profile</a>	<p>RelatedPersons typically have a personal or non-healthcare-specific professional relationship to the patient. A RelatedPerson resource is often a source of information about the patient.</p> <p>But for those individuals who you want to contact for a patient, you would use the Patient's Contact element.</p> <p>Individuals may serve as both a Patient's Contact and a Related Person.</p> <p>Example RelatedPersons are:</p> <ul style="list-style-type: none"> <li>• A patient's wife or husband</li> <li>• A patient's relatives or friends</li> <li>• A neighbor bringing a patient to the hospital</li> <li>• A patient's attorney or guardian</li> </ul>
<a href="#">Drug Formulary - Pdex - Coverage Plan</a>	<p>A member wants to see which drugs are covered by their health plan. The member accesses a mobile application which calls an external endpoint to retrieve the data. The endpoint returns the data in an industry-standard format, which is then translated by the mobile application to be viewed by the member.</p>
<a href="#">Drug Formulary - Pdex - Formulary Drug</a>	<p>A member is taking a drug for which their health plan will soon discontinue coverage. The member authorizes a mobile application to access their health plan information to see if there are alternative drugs that can replace the drug that they are currently taking. The application calls an external endpoint which retrieves the information in an industry-standard format. The application translates the data and presents it to the member.</p>
<a href="#">Provider Directory - Pdex - Plan Net - Healthcare Service</a>	<p>The Healthcare Service endpoint is used to retrieve a list of the services offered by an organization or practitioner at a given location. Users can retrieve all services offered by a provider for which a request was made. They can limit the result of the search by name, speciality, and other parameters.</p>
<a href="#">Provider Directory - Pdex - Plan Net - Insurance Plan</a>	<p>A member uses a mobile app to view the benefits associated with their health insurance plan. The UI calls an external endpoint, which then describes the package of benefits that are offered to them. They can retrieve all of the benefits for a given product and network type.</p>

<a href="#">Provider Directory - Pdex - Plan Net - MedicationKnowledge Profile</a>	A member access a mobile application to view information about a medication that they have been prescribed. The application UI calls an external endpoint which returns information about the drug, such as images of the drug, the classification of the drug, costs, and so on. The application translates the information and displays it to the member.
<a href="#">Provider Directory - Pdex - Plan Net - Organization Affiliation</a>	The organization affiliation endpoint is used to retrieve relationships between two or more organizations. This relationship can include the services one organization provides to another. It can also include the locations where those services are provided and when the services are available at those locations. Users can retrieve all organization affiliations associated with an Organization Affiliation ID for display.
<a href="#">Provider Directory - Pdex - Plan Net - Endpoint</a>	The Endpoint resource contains the technical details of an endpoint. This can be used for electronic services, such as a web service that provides a REST endpoint for another FHIR HL7 server.



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# AllergyIntolerance

## Use Case

A provider uses an application to retrieve the allergy and adverse reaction information for a patient. The application UI calls an external endpoint which returns the allergies and any adverse reactions associated with the patient in an industry-standard format. The application translates the information and displays it to the provider.

## Supported GET Requests

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

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core AllergyIntolerance Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

### [US Core sample request and response](#)

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

```
GET https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir/AllergyIntolerance?patient=07710040201
```

```
{
  "resourceType": "Bundle",
  "id": "02ffded3-9f2f-4f1a-9358-c93032bd94be",
  "meta": {
    "lastUpdated": "2021-01-25T00:42:11.165+00:00"
  },
  "type": "searchset",
  "total": 6,
  "link": [{
    "relation": "self",
    "url": "https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir/AllergyIntolerance?patient=07710040201"
  }, {
    "relation": "next",
    "url": "https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir?_getpages=f03e24d3-fc02-534c-87bf-0e61a562cdac&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
  ],
  "entry": [{
    "fullUrl": "https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir/AllergyIntolerance/567878",
    "resource": {
      "resourceType": "AllergyIntolerance",
      "id": "567878",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-allergyintolerance"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n      <p>No Known Drug Allergy</p>\n      <p>recordedDate:2015-08-06</p>\n      </div>"
      },
      "code": {
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "409137002",
          "display": "No Known Drug Allergy (situation)"
        }
        ],
        "text": "NKDA"
      },
      "patient": {
        "reference": "Patient/07710040201"
      },
      "recorder": {
        "reference": "Practitioner/07710040267"
      }
    }
  }, {
    "fullUrl": "https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir/AllergyIntolerance/0f694b5d-681c-412c-b004-b23d927b7544",
    "resource": {
      "resourceType": "AllergyIntolerance",
      "id": "0f694b5d-681c-412c-b004-b23d927b7544",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-allergyintolerance"]
      },
      "patient": {
        "reference": "Patient/07710040201"
      }
    }
  }
  ], {
    "fullUrl": "https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir/AllergyIntolerance"
  }
}
```

```

/vk05",
  "resource": {
    "resourceType": "AllergyIntolerance",
    "id": "vk05",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-11-18T22:47:46.817+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
allergyintolerance"],
      "tag": [{
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "38ff0dfe-2cca-4ef7-86a4-e667ae253bf8\t\t\t1"
      }
    ],
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n      <p>No Known Drug Allergy<
/p>\n      <p>recordedDate:2015-08-06</p>\n      </div>"
    },
    "identifier": [{
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "vk05"
    }
  ],
  "clinicalStatus": {
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical",
      "code": "active"
    }
  ],
  "verificationStatus": {
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-
verification",
      "code": "confirmed"
    }
  ],
  "code": {
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "409137002",
      "display": "No Known Drug Allergy (situation)"
    }
  ],
  "text": "vk04"
},
  "patient": {
    "reference": "Patient/07710040201"
  }
}, {
  "fullUrl": "https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir/AllergyIntolerance
/AT01",
  "resource": {
    "resourceType": "AllergyIntolerance",
    "id": "AT01",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-11-18T22:49:37.141+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
allergyintolerance"],
      "tag": [{
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "d07213c0-fb6c-4e7b-b188-feb7e26b909e\t\t\t1"
      }
    ]
  }
}

```

```

    ],
    "text": {
      "status": "generated",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p> <b> Generated Narrative with
Details</b> </p> <p> <b> id</b> : example</p> <p> <b> identifier</b> : 49476534</p> <p> <b> clinicalStatus</b>
</p> <b> : Active <span> (Details : {http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical code
'active'\n
= 'Active', given as 'Active'})</span> </p> <p> <b> verificationStatus</b> : Confirmed
<span> (Details : {http://terminology.hl7.org/CodeSystem/allergyintolerance-verification code\n
'confirmed' = 'Confirmed', given as 'Confirmed'})</span> </p> <p> <b> type</b> : allergy</p> <p> <b>
category</b> : food</p> <p> <b> criticality</b> : high</p> <p> <b> code</b> : Cashew nuts <span> (Details :
{SNOMED CT code '227493005' = 'Cashew nuts', given as 'Cashew nuts'})</span> </p> <p> <b> patient</b> : <a>
Patient/example</a> </p> <p> <b> onset</b> : 01/01/2004</p> <p> <b> recordedDate</b> : 09/10/2014 2:58:00
PM</p> <p> <b> recorder</b> : <a> Practitioner/example</a> </p> <p> <b> asserter</b> : <a> Patient/example</a>
</p> <p> <b> lastOccurrence</b> : 01/06/2012</p> <p> <b> note</b> : The criticality is high because of
the observed anaphylactic reaction when challenged\n
with cashew extract.</p> <blockquote> <p> <b>
reaction</b> </p> <p> <b> substance</b> : cashew nut allergenic extract Injectable Product <span> (Details
: {RxNorm code '1160593' = 'cashew nut allergenic extract Injectable Product',\n
given as
'cashew nut allergenic extract Injectable Product'})</span> </p> <p> <b> manifestation</b> : Anaphylactic
reaction <span> (Details : {SNOMED CT code '39579001' = 'Anaphylaxis', given as 'Anaphylactic reaction'})</span>
</p> <p> <b> description</b> : Challenge Protocol. Severe reaction to subcutaneous cashew extract.
Epinephrine administered</p> <p> <b> onset</b> : 12/06/2012</p> <p> <b> severity</b> : severe</p> <p> <b>
exposureRoute</b> : Subcutaneous route <span> (Details : {SNOMED CT code '34206005' = 'Subcutaneous route',
given as 'Subcutaneous route'})</span> </p> </blockquote> <blockquote> <p> <b> reaction</b> </p> <p> <b>
manifestation</b> : Urticaria <span> (Details : {SNOMED CT code '64305001' = 'Urticaria', given as
'Urticaria'})</span> </p> <p> <b> onset</b> : 01/01/2004</p> <p> <b> severity</b> : moderate</p> <p> <b>
note</b> : The patient reports that the onset of urticaria was within 15 minutes of eating cashews.</p> </blockquote>
</div>"
    },
    "identifier": [{
      "system": "http://acme.com/ids/patients/risks",
      "value": "49476534"
    }, {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "AT01"
    }
  ],
  "clinicalStatus": {
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical",
      "code": "active",
      "display": "Active"
    }
  ]
},
"verificationStatus": {
  "coding": [{
    "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-
verification",
    "code": "confirmed",
    "display": "Confirmed"
  }
]
},
"type": "allergy",
"category": ["food"],
"criticality": "high",
"code": {
  "coding": [{
    "system": "http://snomed.info/sct",
    "code": "227493005",
    "display": "Cashew nuts"
  }
]
},
"patient": {
  "reference": "Patient/07710040201"
}
}, {

```

```

    "fullUrl": "https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir/AllergyIntolerance
/AT02",
    "resource": {
      "resourceType": "AllergyIntolerance",
      "id": "AT02",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-11-18T22:56:38.700+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
allergyintolerance"],
        "tag": [{
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "73424dda-3eaa-46ff-8575-558258506c57\t\t\t1"
        }
      ]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\"><p> <b> Generated Narrative with
Details</b> </p> <p> <b> id</b> : example</p> <p> <b> identifier</b> : 49476534</p> <p> <b> clinicalStatus</b>
: Active <span> (Details : {http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical code
'active'\n
= 'Active', given as 'Active'})</span> </p> <p> <b> verificationStatus</b> : Confirmed
<span> (Details : {http://terminology.hl7.org/CodeSystem/allergyintolerance-verification code\n
'confirmed' = 'Confirmed', given as 'Confirmed'})</span> </p> <p> <b> type</b> : allergy</p> <p> <b>
category</b> : food</p> <p> <b> criticality</b> : high</p> <p> <b> code</b> : Cashew nuts <span> (Details :
{SNOMED CT code '227493005' = 'Cashew nuts', given as 'Cashew nuts'})</span> </p> <p> <b> patient</b> : <a
Patient/example</a> </p> <p> <b> onset</b> : 01/01/2004</p> <p> <b> recordedDate</b> : 09/10/2014 2:58:00
PM</p> <p> <b> recorder</b> : <a Practitioner/example</a> </p> <p> <b> asserter</b> : <a Patient/example</a>
</p> <p> <b> lastOccurrence</b> : 01/06/2012</p> <p> <b> note</b> : The criticality is high because of
the observed anaphylactic reaction when challenged\n
with cashew extract.</p> <blockquote> <p> <b>
reaction</b> </p> <p> <b> substance</b> : cashew nut allergenic extract Injectable Product <span> (Details
: {RxNorm code '1160593' = 'cashew nut allergenic extract Injectable Product',\n
given as
'cashew nut allergenic extract Injectable Product'})</span> </p> <p> <b> manifestation</b> : Anaphylactic
reaction <span> (Details : {SNOMED CT code '39579001' = 'Anaphylaxis', given as 'Anaphylactic reaction'})</span>
</p> <p> <b> description</b> : Challenge Protocol. Severe reaction to subcutaneous cashew extract.
Epinephrine administered</p> <p> <b> onset</b> : 12/06/2012</p> <p> <b> severity</b> : severe</p> <p> <b>
exposureRoute</b> : Subcutaneous route <span> (Details : {SNOMED CT code '34206005' = 'Subcutaneous route',
given as 'Subcutaneous route'})</span> </p> </blockquote> <blockquote> <p> <b> reaction</b> </p> <p> <b>
manifestation</b> : Urticaria <span> (Details : {SNOMED CT code '64305001' = 'Urticaria', given as
'Urticaria'})</span> </p> <p> <b> onset</b> : 01/01/2004</p> <p> <b> severity</b> : moderate</p> <p> <b>
note</b> : The patient reports that the onset of urticaria was within 15 minutes of eating cashews.</p> </blockquote>
</div>"
    },
    "identifier": [{
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "AT02"
    }
  ],
    "clinicalStatus": {
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical",
        "code": "active",
        "display": "Active"
      }
    ]
  },
    "verificationStatus": {
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-
verification",
        "code": "confirmed",
        "display": "Confirmed"
      }
    ]
  },
    "type": "allergy",
    "category": ["food"],
    "criticality": "high",
    "code": {

```

```

        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "227493005",
          "display": "Cashew nuts"
        }
      ],
      "patient": {
        "reference": "Patient/07710040201"
      }
    }, {
      "fullUrl": "https://devtzinterop.healthtranzformdev.com/ga/datahub/fhir/AllergyIntolerance/vk01",
      "resource": {
        "resourceType": "AllergyIntolerance",
        "id": "vk01",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-11-25T06:08:42.050+00:00",
          "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-allergyintolerance"],
          "tag": [{
            "system": "tranzform-apim-request-ns",
            "code": "user-request-id",
            "display": "7edbeea2-6b5d-4565-ade7-36eeda67848d\t\t\t1"
          }
        ],
        "text": {
          "status": "generated",
          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n      <p>No Known Drug Allergy</p>\n      <p>recordedDate:2015-08-06</p>\n      </div>"
        },
        "identifier": [{
          "use": "official",
          "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
          "value": "vk01"
        }
      ],
        "clinicalStatus": {
          "coding": [{
            "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical",
            "code": "active"
          }
        ],
        "verificationStatus": {
          "coding": [{
            "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-verification",
            "code": "confirmed"
          }
        ],
        "code": {
          "coding": [{
            "system": "http://snomed.info/sct",
            "code": "409137002",
            "display": "No Known Drug Allergy (situation)"
          }
        ],
        "text": "vk04"
      },
        "patient": {
          "reference": "Patient/07710040201"
        }
      }
    }
  ]
}

```

---

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# CarePlan

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## Use Case

A member accesses a mobile application to view their care plan set up by their provider for their condition, such as diabetes. The application UI calls an external endpoint which returns the care plan information, including the goal of the plan, and the team that is providing care to the member for this plan. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/CarePlan?patient=[reference]&category=<http://hl7.org/fhir/us/core/CodeSystem/careplan-category/assess-plan>

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core CarePlan Profile](#)

## Error Codes

[Definition of error codes](#)

<b>Error Code</b>	<b>Reason</b>
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

## US Core sample request and response

```
[base] / CarePlan ? patient = [reference] & category = http : //hl7.org/fhir/us/core/CodeSystem/careplan-
category|assess-plan

GET https : //<datahub_server>/CarePlan?patient=patient2

{
  "resourceType": "Bundle",
  "id": "26dcb5aa-0571-4a1a-8a05-2caec6ed0bc2",
  "meta": {
    "lastUpdated": "2021-01-24T04:14:39.186+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/CarePlan?patient=patient2"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/CarePlan/CP01",
    "resource": {
      "resourceType": "CarePlan",
      "id": "CP01",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-11-25T06:08:49.780+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-careplan"],
        "tag": [{
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "e01660e6-40ed-41d6-b748-d28fa967e69e\t\t1"
        }
      ]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: f001</p><p><b>contained</b>: , </p><p><b>identifier</b>: CP2903 (OFFICIAL)<
/p><p><b>status</b>: completed</p><p><b>intent</b>: plan</p><p><b>subject</b>: <a>P. van de Heuvel</a><
/p><p><b>period</b>: Jun 26, 2011 --> Jun 27, 2011</p><p><b>careTeam</b>: id: careteam</p><p><b>addresses<
/b>: <a>????</a></p><p><b>goal</b>: id: goal; status: achieved; recovery surgery on heart of patient <span>
(Details) </span>; P. van de Heuvel; Annotation: goal accomplished without complications<
/p><blockquote><p><b>activity</b></p><p><h3>Details</h3><table><tr><td><b>Code<
/b></td><td><b>Status</b></td><td><b>Prohibited</b></td><td><b>Scheduled[x]</b></td><td><b>Performer</b><
/td></tr><tr><td>*</td><td>ProcedureRequest</td><td>Operation on heart <span>(Details : {SNOMED CT code
'64915003' = 'Operative procedure on heart', given as 'Operation on heart'})</span></td><td>completed<
/td><td>true</td><td>2011-06-27T09:30:10+01:00</td><td><a>P. Voigt</a></td></tr></table></blockquote></div>"
    },
    "identifier": [{
      "use": "official",
      "system": "http://www.bmc.nl/zorgportal/identifiers/careplans",
      "value": "CP2903"
    }
  ]
}, {

```

```

        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "CP01"
      }
    ],
    "status": "completed",
    "intent": "plan",
    "subject": {
      "reference": "Patient/patient2",
      "display": "P. van de Heuvel"
    },
    "period": {
      "start": "2011-06-26",
      "end": "2011-06-27"
    },
    "careTeam": [{
      "reference": "CareTeam/careteam"
    }],
    "addresses": [{
      "reference": "Condition/99999",
      "display": "scheduledString"
    }],
    "activity": [{
      "detail": {
        "code": {
          "coding": [{
            "system": "http://snomed.info/sct",
            "code": "64915003",
            "display": "Operation on heart"
          }]
        }
      }
    },
    {
      "status": "completed",
      "scheduledString": "2011-06-27T09:30:10+01:00",
      "performer": [{
        "reference": "Practitioner/pr1",
        "display": "P. Voigt"
      }]
    }
  ]
}

```

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# CareTeam

## Use Case

The CareTeam endpoint is used by other HL7 FHIR APIs, such as the CarePlan endpoint, to retrieve information about the team of practitioners who provide care for a patient. Additionally, it can be called as a stand-alone API.

## Supported GET Requests

- GET [base]/CareTeam?patient=[reference]&status=XXXX

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core CareTeam Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

### US Core sample request and response

```
[base] / CareTeam ? patient = [reference] & status = XXXX
```

```
GET https : //<datahub_server>/CareTeam?patient=35&status=active
```

```
{
  "resourceType": "Bundle",
  "id": "5166cd35-36d9-486a-945d-6e6ab7bec3b8",
  "meta": {
    "lastUpdated": "2021-01-25T00:07:23.588+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/CareTeam?patient=35&status=active"
  }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/CareTeam/263",
    "resource": {
      "resourceType": "CareTeam",
      "id": "263",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2021-01-06T10:04:46.641+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-careteam"]
      },
      "identifier": [{
        "use": "official",
        "type": {
          "coding": [{
            "system": "system",
            "code": "code",
            "display": "display"
          }
          ],
        "text": "textString"
      }
      ],
      "period": {
        "start": "2020-01-08",
        "end": "2022-01-05"
      },
      "assigner": {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      }
    }, {
      "use": "official",
      "type": {
        "coding": [{
          "system": "system",
          "code": "code",
          "display": "display"
        }
        ],
        "text": "textString"
      },
      "period": {
        "start": "2020-11-27",
        "end": "2021-02-15"
      },
      "assigner": {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      }
    }, {
      "use": "official",

```

```

        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "263"
      }
    ],
    "status": "active",
    "category": [{
      "coding": [{
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ]
    }, {
      "text": "textString"
    }], {
      "coding": [{
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ]
    }, {
      "text": "textString"
    }
  ],
  "name": "CareTeam",
  "subject": {
    "reference": "Patient/35"
  },
  "encounter": {
    "reference": "Reference/Id",
    "display": "Reference/Id"
  },
  "participant": [{
    "role": [{
      "coding": [{
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ]
    }, {
      "text": "textString"
    }
  ]
  }, {
    "member": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    },
    "onBehalfOf": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    },
    "period": {
      "start": "2020-08-19",
      "end": "2021-05-26"
    }
  }
  ],
  "reasonCode": [{
    "coding": [{
      "system": "system",
      "code": "code",
      "display": "display"
    }
  ]
  }, {
    "text": "textString"
  }], {
    "coding": [{
      "system": "system",
      "code": "code",
      "display": "display"
    }
  ]
  }
  ],

```

```
        "text": "textString"
      }
    ],
    "reasonReference": [{
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }, {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }
  ],
  "managingOrganization": [{
    "reference": "Reference/Id",
    "display": "Reference/Id"
  }, {
    "reference": "Reference/Id",
    "display": "Reference/Id"
  }
],
"telecom": [{
  "system": "phone",
  "value": "9443865478",
  "use": "home",
  "rank": 1,
  "period": {
    "start": "2020-03-05",
    "end": "2021-11-09"
  }
}
],
"note": [{
  "authorReference": {
    "reference": "Reference/Id",
    "display": "Reference/Id"
  },
  "time": "2000-10-23T00:00:00+00:00",
  "text": "AnnotationText"
}
]
}
```

---

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# Claim

---

## Use Case

A member downloads a mobile application and authorizes it to access their claims data on their behalf (so they can view it). When the member loads the claim screen in the mobile application UI, the UI calls the external endpoint for the Claim. The application can either send in a Claim ID (identifier) to return just one claim, or a Patient ID to return all claims for the member.

The claims data is then translated by the mobile application for display to the member. The member now views their claims information in a user friendly way.

## Supported GET Requests

- GET [base]/Claim?patient=[reference]
- GET [base]/Claim?patient=[reference]&status=XXXX
- GET [base]/Claim?patient=[reference]&status=XXXX&created={gt|lt|ge|le}[date]{&date={gt|lt|ge|le}[date]
- GET [base]/Claim?identifier=[system]][value]
- GET [base]/Claim/[id]

## Response Parameters

The response parameters for the GET method are as follows:

- [R4 Claim](#)

## Error Codes

[Definition of error codes](#)

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/Claim?patient=[reference]

```
[base]/Claim?patient=[reference]
GET    /Claim?patient=156801

{
  "resourceType": "Bundle",
  "id": "5ee7ba40-888a-4fd9-8c37-89183731e8ae",
  "meta": {
    "lastUpdated": "2021-01-25T18:22:08.855+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/qa/datahub/fhir/Claim?patient=156801"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/qa/datahub/fhir/Claim/156801",
    "resource": {
      "resourceType": "Claim",
      "id": "156801",
      "meta": {
        "profile": ["http://hl7.org/fhir/StructureDefinition/Claim"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>A human-readable rendering of the Oral Health Claim</div>"
      },
      "identifier": [{
        "system": "http://happyvalley.com/claim",
        "value": "12345"
      }],
    }
  ]
}
```

```

    }
  ],
  "status": "active",
  "type": {
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/claim-type",
      "code": "oral"
    }]
  },
  "use": "claim",
  "patient": {
    "reference": "Patient/156801"
  },
  "created": "2014-08-16",
  "insurer": {
    "reference": "Organization/2"
  },
  "provider": {
    "reference": "Organization/1"
  },
  "priority": {
    "coding": [{
      "code": "normal"
    }]
  },
  "payee": {
    "type": {
      "coding": [{
        "code": "provider"
      }]
    }
  },
  "careTeam": [{
    "sequence": 1,
    "provider": {
      "reference": "Practitioner/example"
    }
  }],
  "diagnosis": [{
    "sequence": 1,
    "diagnosisCodeableConcept": {
      "coding": [{
        "code": "123456"
      }]
    }
  }],
  "insurance": [{
    "sequence": 1,
    "focal": true,
    "identifier": {
      "system": "http://happyvalley.com/claim",
      "value": "12345"
    },
    "coverage": {
      "reference": "Coverage/9876B1"
    }
  }],
  "item": [{
    "sequence": 1,
    "careTeamSequence": [1],
    "productOrService": {
      "coding": [{
        "code": "1200"
      }]
    }
  }],

```

```

        ],
        "servicedDate": "2014-08-16",
        "unitPrice": {
            "value": 135.57,
            "currency": "USD"
        },
        "net": {
            "value": 135.57,
            "currency": "USD"
        }
    }
}
],
}, {
    "fullUrl": "https://<datahub_server>/qa/datahub/fhir/Claim/960150",
    "resource": {
        "resourceType": "Claim",
        "id": "960150",
        "meta": {
            "profile": ["http://hl7.org/fhir/StructureDefinition/Claim"]
        },
        "text": {
            "status": "generated",
            "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">A human-readable rendering of the
Claim</div>"
        },
        "identifier": [{
            "system": "http://happyhospital.com/claim",
            "value": "9612345"
        }
    ],
    "status": "active",
    "type": {
        "coding": [{
            "system": "http://terminology.hl7.org/CodeSystem/claim-type",
            "code": "institutional"
        }
    ],
    "subType": {
        "coding": [{
            "system": "http://terminology.hl7.org/CodeSystem/ex-claimsubtype",
            "code": "emergency"
        }
    ],
    "use": "claim",
    "patient": {
        "reference": "Patient/156801"
    },
    "created": "2014-08-16",
    "enterer": {
        "identifier": {
            "system": "http://jurisdiction.org/facilities/HOSP1234/users",
            "value": "UC1234"
        }
    },
    "insurer": {
        "reference": "Organization/2"
    },
    "provider": {
        "reference": "Organization/1"
    },
    "priority": {
        "coding": [{
            "code": "normal"
        }
    ],
    "payee": {

```

```

    "type": {
      "coding": [{
        "code": "provider"
      }]
    },
  },
  "facility": {
    "identifier": {
      "system": "http://jurisdiction.org/facilities",
      "value": "HOSP1234"
    }
  },
  "careTeam": [{
    "sequence": 1,
    "provider": {
      "reference": "Practitioner/example"
    }
  }],
  "diagnosis": [{
    "sequence": 1,
    "diagnosisCodeableConcept": {
      "coding": [{
        "code": "654456"
      }]
    }
  }],
  "procedure": [{
    "sequence": 1,
    "type": [{
      "coding": [{
        "code": "primary"
      }]
    }],
    "date": "2014-08-16",
    "procedureCodeableConcept": {
      "coding": [{
        "code": "SDI9901"
      }]
    },
    "text": "Subcutaneous diagnostic implant"
  },
  {
    "udi": [{
      "reference": "Device/example"
    }]
  }],
  "insurance": [{
    "sequence": 1,
    "focal": true,
    "coverage": {
      "reference": "Coverage/9876B1"
    }
  }],
  "item": [{
    "sequence": 1,
    "careTeamSequence": [1],
    "productOrService": {
      "coding": [{
        "system": "http://hl7.org/fhir/ex-serviceproduct",
        "code": "exam"
      }]
    }
  }],
},

```

```

        "servicedDate": "2014-08-16",
        "unitPrice": {
          "value": 125,
          "currency": "USD"
        },
        "net": {
          "value": 125,
          "currency": "USD"
        },
        "encounter": [{
          "reference": "Encounter/example"
        }
      ]
    },
    "total": {
      "value": 125,
      "currency": "USD"
    }
  }
}

```

### [base]/Claim?patient=[reference]&status=XXXX

```

[base] / Claim ? patient = [reference] & status = XXXX

GET /Claim?patient=156801&status=active

{
  "resourceType": "Bundle",
  "id": "c838e3ba-f08b-4ae2-ab83-7ac095673b24",
  "meta": {
    "lastUpdated": "2021-01-25T18:40:33.135+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/qa/datahub/fhir/Claim?patient=156801&status=active"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/qa/datahub/fhir/Claim/156801",
    "resource": {
      "resourceType": "Claim",
      "id": "156801",
      "meta": {
        "profile": ["http://hl7.org/fhir/StructureDefinition/Claim"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>A human-readable rendering of the Oral Health Claim</div>"
      },
      "identifier": [{
        "system": "http://happyvalley.com/claim",
        "value": "12345"
      }
    ],
    "status": "active",
    "type": {
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/claim-type",
        "code": "oral"
      }
    ]
  }
}

```

```

    ],
    "use": "claim",
    "patient": {
      "reference": "Patient/156801"
    },
    "created": "2014-08-16",
    "insurer": {
      "reference": "Organization/2"
    },
    "provider": {
      "reference": "Organization/1"
    },
    "priority": {
      "coding": [{
        "code": "normal"
      }]
    },
    "payee": {
      "type": {
        "coding": [{
          "code": "provider"
        }]
      }
    },
    "careTeam": [{
      "sequence": 1,
      "provider": {
        "reference": "Practitioner/example"
      }
    }],
    "diagnosis": [{
      "sequence": 1,
      "diagnosisCodeableConcept": {
        "coding": [{
          "code": "123456"
        }]
      }
    }],
    "insurance": [{
      "sequence": 1,
      "focal": true,
      "identifier": {
        "system": "http://happyvalley.com/claim",
        "value": "12345"
      },
      "coverage": {
        "reference": "Coverage/9876B1"
      }
    }],
    "item": [{
      "sequence": 1,
      "careTeamSequence": [1],
      "productOrService": {
        "coding": [{
          "code": "1200"
        }]
      },
      "servicedDate": "2014-08-16",
      "unitPrice": {
        "value": 135.57,
        "currency": "USD"
      },
      "net": {

```

```

        "value": 135.57,
        "currency": "USD"
      }
    ]
  }, {
    "fullUrl": "https://<datahub_server>/qa/datahub/fhir/Claim/960150",
    "resource": {
      "resourceType": "Claim",
      "id": "960150",
      "meta": {
        "profile": ["http://hl7.org/fhir/StructureDefinition/Claim"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>A human-readable rendering of the
Claim</div>"
      },
      "identifier": [{
        "system": "http://happyhospital.com/claim",
        "value": "9612345"
      }
    ],
    "status": "active",
    "type": {
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/claim-type",
        "code": "institutional"
      }
    ]
  },
  "subType": {
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/ex-claimsubtype",
      "code": "emergency"
    }
  ]
},
"use": "claim",
"patient": {
  "reference": "Patient/156801"
},
"created": "2014-08-16",
"enterer": {
  "identifier": {
    "system": "http://jurisdiction.org/facilities/HOSP1234/users",
    "value": "UC1234"
  }
},
"insurer": {
  "reference": "Organization/2"
},
"provider": {
  "reference": "Organization/1"
},
"priority": {
  "coding": [{
    "code": "normal"
  }
],
"payee": {
  "type": {
    "coding": [{
      "code": "provider"
    }
  ]
},
"facility": {

```



```

        "identifier": {
          "system": "http://jurisdiction.org/facilities",
          "value": "HOSP1234"
        }
      },
      "careTeam": [{
        "sequence": 1,
        "provider": {
          "reference": "Practitioner/example"
        }
      }
    ],
    "diagnosis": [{
      "sequence": 1,
      "diagnosisCodeableConcept": {
        "coding": [{
          "code": "654456"
        }]
      }
    }
  ],
  "procedure": [{
    "sequence": 1,
    "type": {
      "coding": [{
        "code": "primary"
      }]
    }
  },
  {
    "date": "2014-08-16",
    "procedureCodeableConcept": {
      "coding": [{
        "code": "SDI9901"
      }]
    },
    "text": "Subcutaneous diagnostic implant"
  },
  {
    "udi": {
      "reference": "Device/example"
    }
  }
],
  "insurance": [{
    "sequence": 1,
    "focal": true,
    "coverage": {
      "reference": "Coverage/9876B1"
    }
  }
],
  "item": [{
    "sequence": 1,
    "careTeamSequence": [1],
    "productOrService": {
      "coding": [{
        "system": "http://hl7.org/fhir/ex-serviceproduct",
        "code": "exam"
      }]
    },
    "servicedDate": "2014-08-16",
    "unitPrice": {
      "value": 125,
      "currency": "USD"
    },
    "net": {
      "value": 125,
      "currency": "USD"
    }
  }
]

```

```

    },
    "encounter": [{
      "reference": "Encounter/example"
    }
  ],
  "total": {
    "value": 125,
    "currency": "USD"
  }
}

```

[\[base\]/Claim?patient=\[reference\]&status=XXXX&created={gt|lt|ge|le}\[date\]&date={gt|lt|ge|le}\[date\]](#)

```
[base]/Claim?patient=[reference]&status=XXXX&created={gt|lt|ge|le}[date]&date={gt|lt|ge|le}[date]
```

```
GET /Claim?patient=156801&status=active&created=ge2014-08-16
```

```

{
  "resourceType": "Bundle",
  "id": "93ac49be-1bfa-446f-9a9d-bf08bbf0024d",
  "meta": {
    "lastUpdated": "2021-01-25T18:38:33.742+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/qa/datahub/fhir/Claim?created=ge2014-08-16&patient=156801&status=active"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/qa/datahub/fhir/Claim/156801",
    "resource": {
      "resourceType": "Claim",
      "id": "156801",
      "meta": {
        "profile": ["http://hl7.org/fhir/StructureDefinition/Claim"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>A human-readable rendering of the Oral Health Claim</div>"
      },
      "identifier": [{
        "system": "http://happyvalley.com/claim",
        "value": "12345"
      }],
      "status": "active",
      "type": {
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/claim-type",
          "code": "oral"
        }]
      },
      "use": "claim",
      "patient": {
        "reference": "Patient/156801"
      }
    }
  ]
}

```

```

"created": "2014-08-16",
"insurer": {
  "reference": "Organization/2"
},
"provider": {
  "reference": "Organization/1"
},
"priority": {
  "coding": [{
    "code": "normal"
  }]
},
"payee": {
  "type": {
    "coding": [{
      "code": "provider"
    }]
  }
},
"careTeam": [{
  "sequence": 1,
  "provider": {
    "reference": "Practitioner/example"
  }
}],
"diagnosis": [{
  "sequence": 1,
  "diagnosisCodeableConcept": {
    "coding": [{
      "code": "123456"
    }]
  }
}],
"insurance": [{
  "sequence": 1,
  "focal": true,
  "identifier": {
    "system": "http://happyvalley.com/claim",
    "value": "12345"
  },
  "coverage": {
    "reference": "Coverage/9876B1"
  }
}],
"item": [{
  "sequence": 1,
  "careTeamSequence": [1],
  "productOrService": {
    "coding": [{
      "code": "1200"
    }]
  },
  "servicedDate": "2014-08-16",
  "unitPrice": {
    "value": 135.57,
    "currency": "USD"
  },
  "net": {
    "value": 135.57,
    "currency": "USD"
  }
}]

```

```

    }, {
      "fullUrl": "https://<datahub_server>/qa/datahub/fhir/Claim/960150",
      "resource": {
        "resourceType": "Claim",
        "id": "960150",
        "meta": {
          "profile": ["http://hl7.org/fhir/StructureDefinition/Claim"]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>A human-readable rendering of
the Claim</div>"
        },
        "identifier": [{
          "system": "http://happyhospital.com/claim",
          "value": "9612345"
        }
      ],
      "status": "active",
      "type": {
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/claim-type",
          "code": "institutional"
        }
      ]
    },
    "subType": {
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/ex-claimsubtype",
        "code": "emergency"
      }
    ]
  },
  "use": "claim",
  "patient": {
    "reference": "Patient/156801"
  },
  "created": "2014-08-16",
  "enterer": {
    "identifier": {
      "system": "http://jurisdiction.org/facilities/HOSP1234/users",
      "value": "UC1234"
    }
  },
  "insurer": {
    "reference": "Organization/2"
  },
  "provider": {
    "reference": "Organization/1"
  },
  "priority": {
    "coding": [{
      "code": "normal"
    }
  ]
},
"payee": {
  "type": {
    "coding": [{
      "code": "provider"
    }
  ]
},
"facility": {
  "identifier": {
    "system": "http://jurisdiction.org/facilities",
    "value": "HOSP1234"
  }
},
"careTeam": [{

```

```

        "sequence": 1,
        "provider": {
          "reference": "Practitioner/example"
        }
      ],
      "diagnosis": [{
        "sequence": 1,
        "diagnosisCodeableConcept": {
          "coding": [{
            "code": "654456"
          }]
        }
      }],
      "procedure": [{
        "sequence": 1,
        "type": [{
          "coding": [{
            "code": "primary"
          }]
        }],
        "date": "2014-08-16",
        "procedureCodeableConcept": {
          "coding": [{
            "code": "SDI9901"
          }]
        },
        "text": "Subcutaneous diagnostic implant"
      },
      {
        "udi": [{
          "reference": "Device/example"
        }]
      }
    ],
    "insurance": [{
      "sequence": 1,
      "focal": true,
      "coverage": {
        "reference": "Coverage/9876B1"
      }
    }],
    "item": [{
      "sequence": 1,
      "careTeamSequence": [1],
      "productOrService": {
        "coding": [{
          "system": "http://hl7.org/fhir/ex-serviceproduct",
          "code": "exam"
        }]
      },
      "servicedDate": "2014-08-16",
      "unitPrice": {
        "value": 125,
        "currency": "USD"
      },
      "net": {
        "value": 125,
        "currency": "USD"
      },
      "encounter": [{
        "reference": "Encounter/example"
      }]
    }],
  ],
}

```

```

    ],
    "total": {
      "value": 125,
      "currency": "USD"
    }
  }
}

```

### [base]/Claim?identifier=[system]|[value]

```

[base]/Claim?identifier=[system] |[value]

GET /Claim?identifier=http://happyhospital.com/claim|9612345

{
  "resourceType": "Bundle",
  "id": "79fc6a4a-3865-4012-801c-c8874979119b",
  "meta": {
    "lastUpdated": "2021-01-25T18:39:25.327+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/qa/datahub/fhir/Claim?identifier=http%3A%2F%
2Fhappyhospital.com%2Fclaim%7C9612345"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/qa/datahub/fhir/Claim/960150",
    "resource": {
      "resourceType": "Claim",
      "id": "960150",
      "meta": {
        "profile": ["http://hl7.org/fhir/StructureDefinition/Claim"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>A human-readable rendering of
the Claim</div>"
      },
      "identifier": [{
        "system": "http://happyhospital.com/claim",
        "value": "9612345"
      }
],
      "status": "active",
      "type": {
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/claim-type",
          "code": "institutional"
        }
]
},
      "subType": {
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/ex-claimsubtype",
          "code": "emergency"
        }
]
},
      "use": "claim",
      "patient": {
        "reference": "Patient/156801"
      }
    }
  ]
}

```

```

    },
    "created": "2014-08-16",
    "enterer": {
      "identifier": {
        "system": "http://jurisdiction.org/facilities/HOSP1234/users",
        "value": "UC1234"
      }
    },
    "insurer": {
      "reference": "Organization/2"
    },
    "provider": {
      "reference": "Organization/1"
    },
    "priority": {
      "coding": [{
        "code": "normal"
      }]
    },
    "payee": {
      "type": {
        "coding": [{
          "code": "provider"
        }]
      }
    },
    "facility": {
      "identifier": {
        "system": "http://jurisdiction.org/facilities",
        "value": "HOSP1234"
      }
    },
    "careTeam": [{
      "sequence": 1,
      "provider": {
        "reference": "Practitioner/example"
      }
    }],
    "diagnosis": [{
      "sequence": 1,
      "diagnosisCodeableConcept": {
        "coding": [{
          "code": "654456"
        }]
      }
    }],
    "procedure": [{
      "sequence": 1,
      "type": {
        "coding": [{
          "code": "primary"
        }]
      }
    }],
    "date": "2014-08-16",
    "procedureCodeableConcept": {
      "coding": [{
        "code": "SDI9901"
      }]
    },
    "text": "Subcutaneous diagnostic implant"
  },
  "udi": [{
    "reference": "Device/example"
  }]
}

```

```

    ],
    "insurance": [{
      "sequence": 1,
      "focal": true,
      "coverage": {
        "reference": "Coverage/9876B1"
      }
    }
  ],
  "item": [{
    "sequence": 1,
    "careTeamSequence": [1],
    "productOrService": {
      "coding": [{
        "system": "http://hl7.org/fhir/ex-serviceproduct",
        "code": "exam"
      }]
    },
    "servicedDate": "2014-08-16",
    "unitPrice": {
      "value": 125,
      "currency": "USD"
    },
    "net": {
      "value": 125,
      "currency": "USD"
    },
    "encounter": [{
      "reference": "Encounter/example"
    }]
  }],
  "total": {
    "value": 125,
    "currency": "USD"
  }
}

```

### [base]/Claim/[id]

```
[base]/Claim/[id]
```

```
GET /Claim/960150
```

```

{
  "resourceType": "Claim",
  "id": "960150",
  "meta": {
    "profile": ["http://hl7.org/fhir/StructureDefinition/Claim"]
  },
  "text": {
    "status": "generated",
    "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\">A human-readable rendering of the Claim</div>"
  },
  "identifier": [{
    "system": "http://happyhospital.com/claim",
    "value": "9612345"
  }]
}

```



```

    ],
    "status": "active",
    "type": {
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/claim-type",
        "code": "institutional"
      }
    ]
  },
  "subType": {
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/ex-claimsubtype",
      "code": "emergency"
    }
  ]
},
"use": "claim",
"patient": {
  "reference": "Patient/156801"
},
"created": "2014-08-16",
"enterer": {
  "identifier": {
    "system": "http://jurisdiction.org/facilities/HOSP1234/users",
    "value": "UC1234"
  }
},
"insurer": {
  "reference": "Organization/2"
},
"provider": {
  "reference": "Organization/1"
},
"priority": {
  "coding": [{
    "code": "normal"
  }
]
},
"payee": {
  "type": {
    "coding": [{
      "code": "provider"
    }
  ]
}
},
"facility": {
  "identifier": {
    "system": "http://jurisdiction.org/facilities",
    "value": "HOSP1234"
  }
},
"careTeam": [{
  "sequence": 1,
  "provider": {
    "reference": "Practitioner/example"
  }
}
],
"diagnosis": [{
  "sequence": 1,
  "diagnosisCodeableConcept": {
    "coding": [{
      "code": "654456"
    }
  ]
}
]
},
"procedure": [{

```

```
        "sequence": 1,
        "type": [{
          "coding": [{
            "code": "primary"
          }]
        }],
        "date": "2014-08-16",
        "procedureCodeableConcept": {
          "coding": [{
            "code": "SDI9901"
          }],
          "text": "Subcutaneous diagnostic implant"
        },
        "udi": [{
          "reference": "Device/example"
        }]
      },
      "insurance": [{
        "sequence": 1,
        "focal": true,
        "coverage": {
          "reference": "Coverage/9876B1"
        }
      }],
      "item": [{
        "sequence": 1,
        "careTeamSequence": [1],
        "productOrService": {
          "coding": [{
            "system": "http://hl7.org/fhir/ex-serviceproduct",
            "code": "exam"
          }]
        },
        "servicedDate": "2014-08-16",
        "unitPrice": {
          "value": 125,
          "currency": "USD"
        },
        "net": {
          "value": 125,
          "currency": "USD"
        },
        "encounter": [{
          "reference": "Encounter/example"
        }]
      }],
      "total": {
        "value": 125,
        "currency": "USD"
      }
    }
  ]
}
```

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# Condition

## Use Case

A member uses a mobile application to retrieve their current and past conditions. The application UI calls an external endpoint which returns the conditions that meet the filters, such as the type of condition. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Condition?patient=[reference]&category=[system]][value]
- GET [base]/Condition?patient=[reference]&code=[system]][value]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Condition Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

[base]/Condition?patient=[reference]&category=[system][value]

```
[base]/Condition?patient=[reference]&category=[system] | [value]
```

```
GET /Condition?patient=217&category=system|code
```

```
{
  "resourceType": "Bundle",
  "id": "604f814e-213c-4eb8-a767-82f946640def",
  "meta": {
    "lastUpdated": "2021-01-26T18:23:10.892+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Condition?category=system%7Ccode&patient=217"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Condition/68",
      "resource": {
        "resourceType": "Condition",
        "id": "68",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2021-01-05T18:20:06.920+05:30",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-condition"
          ]
        },
        "identifier": [
          {
            "use": "official",
            "type": {
              "coding": [
                {
                  "system": "system",
                  "code": "code",
                  "display": "display"
                }
              ]
            },
            "text": "textString"
          },
          {
            "period": {
              "start": "2020-08-20",
              "end": "2021-05-23"
            },
            "assigner": {
              "reference": "Reference/Id",
              "display": "Reference/Id"
            }
          }
        ],
        {
          "use": "official",
          "type": {
            "coding": [
              {
                "system": "system",
                "code": "code",
                "display": "display"
              }
            ]
          }
        }
      }
    }
  ]
}
```

```

        ],
        "text": "textString"
    },
    "period": {
        "start": "2020-10-28",
        "end": "2021-03-15"
    },
    "assigner": {
        "reference": "Reference/Id",
        "display": "Reference/Id"
    }
},
{
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "68"
}
],
"clinicalStatus": {
    "coding": [
        {
            "system": "system",
            "code": "code",
            "display": "display"
        }
    ],
    "text": "textString"
},
"verificationStatus": {
    "coding": [
        {
            "system": "system",
            "code": "code",
            "display": "display"
        }
    ],
    "text": "textString"
},
"category": [
    {
        "coding": [
            {
                "system": "system",
                "code": "code",
                "display": "display"
            }
        ],
        "text": "textString"
    },
    {
        "coding": [
            {
                "system": "system",
                "code": "code",
                "display": "display"
            }
        ],
        "text": "textString"
    }
],
"severity": {
    "coding": [
        {
            "system": "system",
            "code": "code",
            "display": "display"
        }
    ],
    "text": "textString"
},
"code": {

```

```

      "coding": [
        {
          "system": "system",
          "code": "code",
          "display": "display"
        }
      ],
      "text": "textString"
    },
    "bodySite": [
      {
        "coding": [
          {
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ],
        "text": "textString"
      },
      {
        "coding": [
          {
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ],
        "text": "textString"
      }
    ],
    "subject": {
      "reference": "Patient/217"
    },
    "encounter": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    },
    "onsetAge": {
      "value": 23,
      "unit": "yr"
    },
    "abatementAge": {
      "value": 23,
      "unit": "yr"
    },
    "recordedDate": "2021-01-05T18:20:06+05:30",
    "recorder": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    },
    "asserter": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    },
    "stage": [
      {
        "summary": {
          "coding": [
            {
              "system": "system",
              "code": "code",
              "display": "display"
            }
          ],
          "text": "textString"
        },
        "assessment": [
          {
            "reference": "Reference/Id",
            "display": "Reference/Id"
          }
        ]
      }
    ]
  }
}

```

```

    },
    {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }
  ],
  "type": {
    "coding": [
      {
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  }
},
{
  "summary": {
    "coding": [
      {
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  },
  "assessment": [
    {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    },
    {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }
  ],
  "type": {
    "coding": [
      {
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  }
}
],
"evidence": [
  {
    "code": [
      {
        "coding": [
          {
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ],
        "text": "textString"
      }
    ],
    {
      "coding": [
        {
          "system": "system",
          "code": "code",
          "display": "display"
        }
      ]
    }
  ],

```



```

        "text": "textString"
      },
    ],
    "detail": [
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      },
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      }
    ]
  },
  {
    "code": [
      {
        "coding": [
          {
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ],
        "text": "textString"
      },
      {
        "coding": [
          {
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ],
        "text": "textString"
      }
    ],
    "detail": [
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      },
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      }
    ]
  }
],
"note": [
  {
    "authorReference": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    },
    "time": "2000-10-23T05:30:00+05:30",
    "text": "AnnotationText"
  }
]
}

```

[\[base\]/Condition?patient=\[reference\]&code=\[system\]\[value\]](#)

[base] /Condition?patient=[reference] &code=[system] | [value]

```

GET /Condition?patient=217&code=system|code

{
  "resourceType": "Bundle",
  "id": "48863720-a32c-428b-bfa5-8b0dc5cfb782",
  "meta": {
    "lastUpdated": "2021-01-26T18:21:23.583+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Condition?code=system%7Ccode&patient=217"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Condition/68",
      "resource": {
        "resourceType": "Condition",
        "id": "68",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2021-01-05T18:20:06.920+05:30",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-condition"
          ]
        },
        "identifier": [
          {
            "use": "official",
            "type": {
              "coding": [
                {
                  "system": "system",
                  "code": "code",
                  "display": "display"
                }
              ],
              "text": "textString"
            },
            "period": {
              "start": "2020-08-20",
              "end": "2021-05-23"
            },
            "assigner": {
              "reference": "Reference/Id",
              "display": "Reference/Id"
            }
          },
          {
            "use": "official",
            "type": {
              "coding": [
                {
                  "system": "system",
                  "code": "code",
                  "display": "display"
                }
              ],
              "text": "textString"
            },
            "period": {
              "start": "2020-10-28",
              "end": "2021-03-15"
            },
            "assigner": {
              "reference": "Reference/Id",
            }
          }
        ]
      }
    }
  ]
}

```

```

        "display": "Reference/Id"
      }
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "68"
    }
  ],
  "clinicalStatus": {
    "coding": [
      {
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  },
  "verificationStatus": {
    "coding": [
      {
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  },
  "category": [
    {
      "coding": [
        {
          "system": "system",
          "code": "code",
          "display": "display"
        }
      ],
      "text": "textString"
    },
    {
      "coding": [
        {
          "system": "system",
          "code": "code",
          "display": "display"
        }
      ],
      "text": "textString"
    }
  ],
  "severity": {
    "coding": [
      {
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  },
  "code": {
    "coding": [
      {
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  },
}

```

```
"bodySite": [
  {
    "coding": [
      {
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  },
  {
    "coding": [
      {
        "system": "system",
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  }
],
"subject": {
  "reference": "Patient/217"
},
"encounter": {
  "reference": "Reference/Id",
  "display": "Reference/Id"
},
"onsetAge": {
  "value": 23,
  "unit": "yr"
},
"abatementAge": {
  "value": 23,
  "unit": "yr"
},
"recordedDate": "2021-01-05T18:20:06+05:30",
"recorder": {
  "reference": "Reference/Id",
  "display": "Reference/Id"
},
"asserter": {
  "reference": "Reference/Id",
  "display": "Reference/Id"
},
"stage": [
  {
    "summary": {
      "coding": [
        {
          "system": "system",
          "code": "code",
          "display": "display"
        }
      ],
      "text": "textString"
    },
    "assessment": [
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      },
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      }
    ],
    "type": {
      "coding": [
        {
```

```

        "system": "system",
        "code": "code",
        "display": "display"
      },
    ],
    "text": "textString"
  },
  {
    "summary": {
      "coding": [
        {
          "system": "system",
          "code": "code",
          "display": "display"
        }
      ],
      "text": "textString"
    },
    "assessment": [
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      },
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      }
    ],
    "type": {
      "coding": [
        {
          "system": "system",
          "code": "code",
          "display": "display"
        }
      ],
      "text": "textString"
    }
  },
  "evidence": [
    {
      "code": [
        {
          "coding": [
            {
              "system": "system",
              "code": "code",
              "display": "display"
            }
          ],
          "text": "textString"
        }
      ],
      "coding": [
        {
          "system": "system",
          "code": "code",
          "display": "display"
        }
      ],
      "text": "textString"
    }
  ],
  "detail": [
    {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    },
    {

```

```
        "reference": "Reference/Id",
        "display": "Reference/Id"
      }
    ],
  },
  {
    "code": [
      {
        "coding": [
          {
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ],
        "text": "textString"
      },
      {
        "coding": [
          {
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ],
        "text": "textString"
      }
    ],
    "detail": [
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      },
      {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      }
    ]
  },
],
"note": [
  {
    "authorReference": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    },
    "time": "2000-10-23T05:30:00+05:30",
    "text": "AnnotationText"
  }
]
```

---

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# Coverage

## Use Case

The coverage endpoint is used during other HL7 FHIR APIs to retrieve coverage (enrollment) information for a member. Additionally, it can be called as a stand-alone API. When a user loads the coverage screen in the mobile application UI, the UI calls in to the external endpoint for coverage. That call will retrieve the coverage data and return it in the industry-standard format where it is then translated by the mobile application for display. The user now views the coverage information in a user friendly way.

## Supported GET Requests

- GET [base]/Coverage?patient=[reference]

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN-BB-Coverage](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.



# Sample Requests and Responses

## CARIN BB Sample request and response

```
[base] / Coverage ? patient = [reference]

GET https://<datahub_server>/Coverage?patient=Patient1&_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-coverage

{
  "resourceType": "Bundle",
  "id": "a617bc73-ba37-4031-a81a-2acf38de834e",
  "meta": {
    "lastUpdated": "2021-01-25T00:52:50.660+00:00"
  },
  "type": "searchset",
  "total": 7,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Coverage?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%2FStructureDefinition%2Fcarin-bb-coverage&patient=Patient1"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=7cdde129-1691-53fb-a875-48580da7ac2&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Coverage/Coverage1",
    "resource": {
      "resourceType": "Coverage",
      "id": "Coverage1",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-09-28T06:25:58.558+00:00",
        "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-coverage"]
      },
      "identifier": [{
        "system": "http://www.bcbs.com/fhir/ns/NamingSystem/insurance-xyz-coverage-identifier",
        "value": "4B55-8EC3-43A4703CAD34"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "Coverage1"
      }
    ],
    "status": "active",
    "type": {
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/v3-ActCode",
        "code": "EHCPOL",
        "display": "extended healthcare"
      }
    ]
  },
    "subscriberId": "235656886",
    "beneficiary": {
      "reference": "Patient/Patient1"
    },
    "relationship": {
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/subscriber-relationship",
        "code": "self",
        "display": "Self"
      }
    ]
  }
}]

```

```

    }, {
      "fullUrl": "https://<datahub_server>/Coverage/d5d2a848-c605-4533-b8f7-b20a533ecf26",
      "resource": {
        "resourceType": "Coverage",
        "id": "d5d2a848-c605-4533-b8f7-b20a533ecf26",
        "meta": {
          "profile": ["http://hl7.org/fhir/us/car/StructureDefinition/car-bb-coverage"]
        },
        "identifier": [{
          "system": "http://www.bcbs.com/fhir/ns/NamingSystem/insurance-xyz-coverage-
identifier",
          "value": "4B55-8EC3-43A4703CAD34"
        }
      ],
      "beneficiary": {
        "reference": "Patient/Patient1"
      }
    }
  ]
}

```

---

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# DiagnosticReport - Laboratory Results Reporting

## Use Case

A member downloads a mobile application and authorizes it to access their member (patient) laboratory results data so they can view it. The UI calls an external endpoint, which then returns the laboratory result data in an industry-standard format. The laboratory result data is then translated by the mobile application for display to the member.

The member now views their laboratory results in a user friendly way.

## Supported GET Requests

- GET [base]/DiagnosticReport?patient=[reference]
- GET [base]/DiagnosticReport?patient=[reference]&category=http://terminology.hl7.org/CodeSystem/v2-0074|LAB
- GET [base]/DiagnosticReport?patient=[reference]&code={system}|[value]
- GET [base]/DiagnosticReport?patient=[reference]&category=http://terminology.hl7.org/CodeSystem/v2-0074|LAB&date={gt|lt|ge|le} **NOTE:** The date which is being evaluated is the **effectiveDateTime**.

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core DiagnosticReport Profile for Laboratory Results Reporting](#)

## Error Codes

[Definition of error codes](#)

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/DiagnosticReport?patient=[reference]

```
[base] / DiagnosticReport ? patient = [reference]
GET /fhir/DiagnosticReport?patient=217

{
  "resourceType": "Bundle",
  "id": "84579ffc-cbc5-410d-8673-50929d1802d8",
  "meta": {
    "lastUpdated": "2021-01-26T18:30:58.262+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/DiagnosticReport?patient=217"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/DiagnosticReport/328",
    "resource": {
      "resourceType": "DiagnosticReport",
      "id": "328",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2021-01-05T18:20:07.113+05:30",
        "profile": [
          "http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab"
        ]
      },
      "identifier": [{
        "use": "official",
        "type": {
          "coding": [{
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ]
      }
    ]
  }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/DiagnosticReport/328",
      "resource": {
        "resourceType": "DiagnosticReport",
        "id": "328",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2021-01-05T18:20:07.113+05:30",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab"
          ]
        },
        "identifier": [
          {
            "use": "official",
            "type": {
              "coding": [
                {
                  "system": "system",
                  "code": "code",
                  "display": "display"
                }
              ]
            }
          }
        ]
      }
    }
  ]
}
```

```

    },
    "text": "textString"
  },
  "period": {
    "start": "2020-01-22",
    "end": "2021-12-20"
  },
  "assigner": {
    "reference": "Reference/Id",
    "display": "Reference/Id"
  }
}, {
  "use": "official",
  "type": {
    "coding": [{
      "system": "system",
      "code": "code",
      "display": "display"
    }
  ],
  "text": "textString"
},
  "period": {
    "start": "2020-09-15",
    "end": "2021-04-27"
  },
  "assigner": {
    "reference": "Reference/Id",
    "display": "Reference/Id"
  }
}, {
  "use": "official",
  "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
  "value": "328"
}
],
"basedOn": [{
  "reference": "Reference/Id",
  "display": "Reference/Id"
}, {
  "reference": "Reference/Id",
  "display": "Reference/Id"
}
],
"status": "amended",
"category": [{
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
  ],
  "text": "textString"
}, {
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
  ],
  "text": "textString"
}
],
"code": {
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
  ],
}
],

```

```

    "text": "textString"
  },
  "subject": {
    "reference": "Patient/217"
  },
  "encounter": {
    "reference": "Reference/Id",
    "display": "Reference/Id"
  },
  "effectiveDateTime": "2021-01-05T18:20:07+05:30",
  "issued": "2021-01-05T18:20:07.121+05:30",
  "performer": [{
    "reference": "Reference/Id",
    "display": "Reference/Id"
  }, {
    "reference": "Reference/Id",
    "display": "Reference/Id"
  }
],
"resultsInterpreter": [{
  "reference": "Reference/Id",
  "display": "Reference/Id"
}, {
  "reference": "Reference/Id",
  "display": "Reference/Id"
}
],
"specimen": [{
  "reference": "Reference/Id",
  "display": "Reference/Id"
}, {
  "reference": "Reference/Id",
  "display": "Reference/Id"
}
],
"result": [{
  "reference": "Reference/Id",
  "display": "Reference/Id"
}, {
  "reference": "Reference/Id",
  "display": "Reference/Id"
}
],
"imagingStudy": [{
  "reference": "Reference/Id",
  "display": "Reference/Id"
}, {
  "reference": "Reference/Id",
  "display": "Reference/Id"
}
],
"media": [{
  "comment": "Media comment",
  "link": {
    "reference": "Reference/Id",
    "display": "Reference/Id"
  }
}
],
"conclusion": "Conclusion",
"conclusionCode": [{
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
}, {
  "coding": [{
    "system": "system",

```

```
        "code": "code",
        "display": "display"
      }
    ],
    "text": "textString"
  }
},
"presentedForm": [
  {
    "contentType": "jpg",
    "language": "language",
    "data": "anNkaGxzZGxkc2hoZHNpbz0=",
    "url": "www.photoUrl",
    "size": 1,
    "hash": "aGFzaA==",
    "title": "PhotoType",
    "creation": "2021-01-05T18:20:07+05:30"
  },
  {
    "contentType": "jpg",
    "language": "language",
    "data": "anNkaGxzZGxkc2hoZHNpbz0=",
    "url": "www.photoUrl",
    "size": 1,
    "hash": "aGFzaA==",
    "title": "PhotoType",
    "creation": "2021-01-05T18:20:07+05:30"
  }
]
}
```

[\[base\]/DiagnosticReport?patient=\[reference\]&category=http://terminology.hl7.org/CodeSystem/v2-0074|LAB](#)

```
[base] / DiagnosticReport ? patient = [reference] & category = http : //terminology.hl7.org/CodeSystem/v2-0074|LAB

GET /DiagnosticReport?patient=pat7&category=http://terminology.hl7.org/CodeSystem/v2-0074|LAB

{
  "resourceType": "Bundle",
  "id": "566898e9-b63e-4eb4-9ef5-709c571f402b",
  "meta": {
    "lastUpdated": "2021-01-26T18:33:11.239+00:00"
  },
  "type": "searchset",
  "total": 7,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/DiagnosticReport?category=http%3A%2F%2Fterminology.hl7.org%2FCodeSystem%2Fv2-0074%7CLAB&patient=pat7"
    },
    {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=44356dc9-69e8-5bea-bf69-e0bda724452b&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/DiagnosticReport/cb2b5fe2-aac2-450e-bdec-7898c706483a",
      "resource": {
        "resourceType": "DiagnosticReport",
        "id": "cb2b5fe2-aac2-450e-bdec-7898c706483a",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-21T17:45:00.787+00:00",
          "profile": [
```

```

    "http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab"
  ],
  "tag": [
    {
      "system": "tranzform-apim-request-ns",
      "code": "user-request-id",
      "display": "79f757f4-c1e7-4eac-b89e-406eb21d33c8\t\t\t1"
    }
  ],
  "text": {
    "status": "generated",
    "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n\t\t\t<h3>CBC Report for Wile. E. COYOTE (MRN: 23453) issued 3-Mar 2011 11:45</h3>\n\t\t\t<pre>\nTest
Units
Value Reference Range\nHaemoglobin g/L 176 135 - 180\nRed Cell Count
x10*12/L 5.9 4.2 - 6.0\nHaematocrit 0.55+ 0.38 - 0.52\nMean Cell
Volume fL 99+ 80 - 98\nMean Cell Haemoglobin pg 36+ 27 -
35\nPlatelet Count x10*9/L 444 150 - 450\nWhite Cell Count x10*9/L 4.6
4.0 - 11.0\nNeutrophils % 20\nNeutrophils x10*9/L 0.9--- 2.0 - 7.5
\nLymphocytes % 20\nLymphocytes x10*9/L 0.9- 1.1 - 4.0
\nMonocytes % 20\nMonocytes x10*9/L 0.9 0.2 - 1.0
\nEosinophils % 20\nEosinophils x10*9/L 0.92++ 0.04 - 0.40
\nBasophils % 20\nBasophils x10*9/L 0.92+++ <0.21\n <
/pre>\n\t\t\t<p>Acme Laboratory, Inc signed: Dr Pete Pathologist</p>\n\t\t</div>"
  },
  "identifier": [
    {
      "system": "http://acme.com/lab/reports",
      "value": "6234400"
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "cb2b5fe2-aac2-450e-bdec-7898c706483a"
    }
  ],
  "status": "final",
  "category": [
    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/v2-0074",
          "code": "LAB"
        }
      ]
    }
  ],
  "code": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "58410-4",
        "display": "Complete blood count (hemogram) panel - Blood by Automated count"
      },
      {
        "code": "CBC",
        "display": "MASTER FULL BLOOD COUNT"
      }
    ],
    "text": "Complete Blood Count"
  },
  "subject": {
    "reference": "Patient/pat7"
  },
  "effectiveDateTime": "2011-03-05T08:30:00+11:00",
  "issued": "2011-03-04T11:45:33+11:00"
},
{
  "fullUrl": "https://<datahub_server>/DiagnosticReport/2af38d40-6711-4736-9362-2ea3d655f36e",
  "resource": {
    "resourceType": "DiagnosticReport",
    "id": "2af38d40-6711-4736-9362-2ea3d655f36e",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-21T20:45:53.903+00:00",
      "profile": [
        "http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab"
      ]
    }
  }
}

```





```

{
  "resourceType": "Bundle",
  "id": "d3312e66-1edf-4e15-9402-b95537606a02",
  "meta": {
    "lastUpdated": "2021-01-26T18:28:33.124+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/DiagnosticReport?category=system%7Ccode&patient=217"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/DiagnosticReport/328",
    "resource": {
      "resourceType": "DiagnosticReport",
      "id": "328",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2021-01-05T18:20:07.113+05:30",
        "profile": [
          "http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab"
        ]
      },
      "identifier": [{
        "use": "official",
        "type": {
          "coding": [{
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ],
        "text": "textString"
      }
    ],
    "period": {
      "start": "2020-01-22",
      "end": "2021-12-20"
    },
    "assigner": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }
  }
], {
  "use": "official",
  "type": {
    "coding": [{
      "system": "system",
      "code": "code",
      "display": "display"
    }
  ],
  "text": "textString"
}, {
  "period": {
    "start": "2020-09-15",
    "end": "2021-04-27"
  },
  "assigner": {
    "reference": "Reference/Id",
    "display": "Reference/Id"
  }
}, {
  "use": "official",
  "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
  "value": "328"
}
],
}

```

```

"basedOn": [{
  "reference": "Reference/Id",
  "display": "Reference/Id"
}, {
  "reference": "Reference/Id",
  "display": "Reference/Id"
}
],
"status": "amended",
"category": [{
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
}, {
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
}
],
"code": {
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
},
"subject": {
  "reference": "Patient/217"
},
"encounter": {
  "reference": "Reference/Id",
  "display": "Reference/Id"
},
"effectiveDateTime": "2021-01-05T18:20:07+05:30",
"issued": "2021-01-05T18:20:07.121+05:30",
"performer": [{
  "reference": "Reference/Id",
  "display": "Reference/Id"
}, {
  "reference": "Reference/Id",
  "display": "Reference/Id"
}
],
"resultsInterpreter": [{
  "reference": "Reference/Id",
  "display": "Reference/Id"
}, {
  "reference": "Reference/Id",
  "display": "Reference/Id"
}
],
"specimen": [{
  "reference": "Reference/Id",
  "display": "Reference/Id"
}, {
  "reference": "Reference/Id",
  "display": "Reference/Id"
}
],
"result": [{
  "reference": "Reference/Id",

```

```
        "display": "Reference/Id"
      }, {
        "reference": "Reference/Id",
        "display": "Reference/Id"
      }
    ],
    "imagingStudy": [{
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }, {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }
  ],
  "media": [{
    "comment": "Media comment",
    "link": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }
  }
],
"conclusion": "Conclusion",
"conclusionCode": [{
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
}, {
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
}
],
"presentedForm": [{
  "contentType": "jpg",
  "language": "language",
  "data": "aNkAGxzZGxkc2hoZHnpbz0=",
  "url": "www.photoUrl",
  "size": 1,
  "hash": "aGFzaA==",
  "title": "PhotoType",
  "creation": "2021-01-05T18:20:07+05:30"
}, {
  "contentType": "jpg",
  "language": "language",
  "data": "aNkAGxzZGxkc2hoZHnpbz0=",
  "url": "www.photoUrl",
  "size": 1,
  "hash": "aGFzaA==",
  "title": "PhotoType",
  "creation": "2021-01-05T18:20:07+05:30"
}
]
}
```

[base]/DiagnosticReport?patient=[reference]&category=http://terminology.hl7.org/CodeSystem/v2-0074|LAB&date={gt|lt|ge|le}

```
[base] / DiagnosticReport ? patient = [reference] & category = http : //terminology.hl7.org/CodeSystem/v2-0074|LAB&date={gt|lt|ge|le}
```

NOTE: The date which is being evaluated is the effectiveDateTime.

```
GET /DiagnosticReport?patient=pat7&category=http://terminology.hl7.org/CodeSystem/v2-0074|LAB&date=ge2011-03-04
```

```
{
  "resourceType": "Bundle",
  "id": "764bab60-58d3-4172-bb1b-937d6cca8141",
  "meta": {
    "lastUpdated": "2021-01-26T18:34:27.747+00:00"
  },
  "type": "searchset",
  "total": 7,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/DiagnosticReport?category=http%3A%2F%2Fterminology.hl7.org%2FCodeSystem%2Fv2-0074%7CLAB&date=ge2011-03-04&patient=pat7"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>/_getpages=e7398027-b22f-5a69-b77a-50a5b62994ab&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/DiagnosticReport/cb2b5fe2-aac2-450e-bdec-7898c706483a",
    "resource": {
      "resourceType": "DiagnosticReport",
      "id": "cb2b5fe2-aac2-450e-bdec-7898c706483a",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-09-21T17:45:00.787+00:00",
        "profile": [
          "http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab"
        ],
        "tag": [{
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "79f757f4-c1e7-4eac-b89e-406eb21d33c8\t\t\t1"
        }
      ]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'\>\n\t\t\t<h3>CBC Report for Wile. E. COYOTE (MRN: 23453) issued 3-Mar 2011 11:45</h3>\n\t\t\t<pre>\nTest                                     Units\nValue      Reference Range\nHaemoglobin          g/L          176          135 - 180\nRed Cell Count\nx10*12/L          5.9          4.2 - 6.0\nHaematocrit          0.55+          0.38 - 0.52\nMean Cell Volume          fL          99+          80 - 98\nMean Cell Haemoglobin pg          36+          27 - 35\nPlatelet Count          x10*9/L          444          150 - 450\nWhite Cell Count          x10*9/L          4.6          4.0 - 11.0\nNeutrophils          %          20\nNeutrophils          x10*9/L          0.9---          2.0 - 7.5\nLymphocytes          %          20\nLymphocytes          x10*9/L          0.9-          1.1 - 4.0\nMonocytes          %          20\nMonocytes          x10*9/L          0.9          0.2 - 1.0\nEosinophils          %          20\nEosinophils          x10*9/L          0.92++          0.04 - 0.40\nBasophils          %          20\nBasophils          x10*9/L          0.92+++          <0.21\n          <\n/pre>\n\t\t\t<p>Acme Laboratory, Inc signed: Dr Pete Pathologist</p>\n\t\t\t</div>"
    },
    "identifier": [{
      "system": "http://acme.com/lab/reports",
      "value": "6234400"
    }, {
      "use": "official",

```

```

      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "cb2b5fe2-aac2-450e-bdec-7898c706483a"
    },
    ],
    "status": "final",
    "category": [{
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/v2-0074",
        "code": "LAB"
      }
    ]
  },
  ],
  "code": {
    "coding": [{
      "system": "http://loinc.org",
      "code": "58410-4",
      "display": "Complete blood count (hemogram) panel - Blood by Automated count"
    }, {
      "code": "CBC",
      "display": "MASTER FULL BLOOD COUNT"
    }
  ]
},
"text": "Complete Blood Count"
},
"subject": {
  "reference": "Patient/pat7"
},
"effectiveDateTime": "2011-03-05T08:30:00+11:00",
"issued": "2011-03-04T11:45:33+11:00"
}, {
  "fullUrl": "https://<datahub_server>/DiagnosticReport/2af38d40-6711-4736-9362-2ea3d655f36e",
  "resource": {
    "resourceType": "DiagnosticReport",
    "id": "2af38d40-6711-4736-9362-2ea3d655f36e",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-21T20:45:53.903+00:00",
      "profile": [
        "http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab"
      ]
    },
    "tag": [{
      "system": "tranzform-apim-request-ns",
      "code": "user-request-id",
      "display": "0dc99636-c4eb-4c1d-b833-1187ba9f76a4\t\t\t1"
    }
  ]
},
"text": {
  "status": "generated",
  "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\">\n\t\t\t<h3>CBC Report for Wile. E. COYOTE (MRN: 23453) issued 3-Mar 2011 11:45</h3>\n\t\t\t<pre>\nTest                                     Units
Value      Reference Range\nHaemoglobin                g/L          176          135 - 180\nRed Cell Count
x10*12/L    5.9          4.2 - 6.0\nHaematocrit                0.55+        0.38 - 0.52\nMean Cell
Volume      fL          99+          80 - 98\nMean Cell Haemoglobin pg    36+          27 -
35\nPlatelet Count          x10*9/L      444          150 - 450\nWhite Cell Count          x10*9/L      4.6
4.0 - 11.0\nNeutrophils              %            20\nNeutrophils              x10*9/L      0.9---        2.0 - 7.5
\nLymphocytes              %            20\nLymphocytes              x10*9/L      0.9-          1.1 - 4.0
\nMonocytes                %            20\nMonocytes                x10*9/L      0.9           0.2 - 1.0
\nEosinophils              %            20\nEosinophils              x10*9/L      0.92++        0.04 - 0.40
\nBasophils                %            20\nBasophils                x10*9/L      0.92+++       <0.21\n      <
/pre>\n\t\t\t<p>Acme Laboratory, Inc signed: Dr Pete Pathologist</p>\n\t\t</div>"
},
"identifier": [{
  "system": "http://acme.com/lab/reports",
  "value": "6234401"
}, {
  "use": "official",
  "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
  "value": "2af38d40-6711-4736-9362-2ea3d655f36e"
}

```

```
    },
    ],
    "status": "final",
    "category": [{
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/v2-0074",
        "code": "LAB"
      }
    ]
  }
],
"code": {
  "coding": [{
    "system": "http://loinc.org",
    "code": "58410-4",
    "display": "Complete blood count (hemogram) panel - Blood by Automated count"
  }, {
    "code": "CBC",
    "display": "MASTER FULL BLOOD COUNT"
  }
],
  "text": "Complete Blood Count"
},
"subject": {
  "reference": "Patient/pat7"
},
"effectiveDateTime": "2011-03-05T08:30:00+11:00",
"issued": "2011-03-04T11:45:33+11:00"
}
]
```

---

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# DiagnosticReport - Report and Note Exchange

## Use Case

A member accesses a mobile application and authorizes it to access their diagnostic reports related to their cardiac condition. The UI calls an external endpoint, which returns the diagnostic reports in an industry-standard format. The application translates the diagnostic report information and displays it to the member.

## Supported GET Requests

- GET [base]/DiagnosticReport?patient=[reference]
- GET [base]/DiagnosticReport?patient=[reference]&category={system}][value]
- GET [base]/DiagnosticReport?patient=[reference]&code={system}][value]
- GET [base]/DiagnosticReport?patient=[reference]&category={system}][value]&date={gt|lt|ge|le}

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core DiagnosticReport Profile for Report and Note exchange](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.



# Sample Requests and Responses

Examples will be added once data is available.

---

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# DocumentReference

## Use Case

A member has recently had an outpatient procedure performed. They want to review what the clinic told them about what activities they could do. The member accesses a mobile application which calls an external endpoint to gather the information the provider entered about their activity level after the procedure. The external endpoint returns the information in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/DocumentReference/{id}
- GET [base]/DocumentReference?\_id={logicalid}
- GET [base]/DocumentReference?patient=[reference]
- GET [base]/DocumentReference?patient=[reference]&category={system}][value]
- GET [base]/DocumentReference?patient=[reference]&category={system}][value]&date={gt|lt|ge|le}[date]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core DocumentReference Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.

500

Internal server error.

## Sample Requests and Responses

[base]/DocumentReference/[id]

```
[base]/DocumentReference/[id]

GET /DocumentReference/1990

{
  "resourceType": "Bundle",
  "id": "79c24d36-872d-4dc0-ac80-907178daa522",
  "meta": {
    "lastUpdated": "2021-01-26T19:17:46.778+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/DocumentReference?_id=1990"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/DocumentReference/1990",
      "resource": {
        "resourceType": "DocumentReference",
        "id": "1990",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-documentreference"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b></p><p><b>id</b>: episode-summary</p><p><b>meta</b>: </p><p><b>identifier</b>: urn:oid:2.16.840.1.113883.19.5.99999.1</p><p><b>status</b>: current</p><p><b>type</b>: <span title='Codes: {http://loinc.org 34133-9}'>CCD Document</span></p><p><b>category</b>: <span title='Codes: {http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-category clinical-note}'>Clinical Note</span></p><p><b>subject</b>: <a href='\"Patient-example.html\"'>Amy Shaw. Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy V. Shaw , Amy V. Baxter ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 1987-02-20</a></p><p><b>date</b>: Mar 9, 2016, 3:29:46 PM</p><p><b>author</b>: <a href='\"Practitioner-practitioner-1.html\"'>Ronald Bone, MD. Generated Summary: id: practitioner-1; 9941339108, 25456; Ronald Bone </a></p><p><b>description</b>: Pulmonology clinic acute visit</p><h3>Contents</h3><table class='\"grid\"'><tr><td>-</td><td><b>Attachment</b></td><td><b>Format</b></td></tr><tr><td>*</td><td></td><td><span title='\"{urn:oid:1.3.6.1.4.1.19376.1.2.3 urn:hl7-org:sdwg:ccda-structuredBody:2.1}\">Documents following C-CDA constraints using a structured body</span></td></tr></table><h3>Contexts</h3><table class='\"grid\"'><tr><td>-</td><td><b>Period</b></td></tr><tr><td>*</td><td>Dec 22, 2004, 9:00:00 PM --> Dec 22, 2004, 9:01:00 PM</td></tr></table></div>"
        },
        "identifier": [
          {
            "system": "urn:ietf:rfc:3986",
            "value": "urn:oid:2.16.840.1.113883.19.5.99999.1"
          }
        ],
        "status": "current",
        "type": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "34133-9",
            }
          ]
        }
      }
    }
  ]
}
```

```
      "display": "Summary of episode note"
    },
    ],
    "text": "CCD Document"
  },
  "category": [
    {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-
category",
          "code": "clinical-note",
          "display": "Clinical Note"
        }
      ],
      "text": "Clinical Note"
    }
  ],
  "subject": {
    "reference": "Patient/07710040201",
    "display": "Amy Shaw"
  },
  "date": "2016-03-09T15:29:46Z",
  "author": [
    {
      "reference": "Practitioner-practitioner-1",
      "display": "Ronald Bone, MD"
    }
  ],
  "description": "Pulmonology clinic acute visit",
  "content": [
    {
      "attachment": {
        "contentType": "text/plain",
        "url": "/Binary/1-note",
        "title": "Uri where the data can be found: [base]/Binary/1-note"
      },
      "format": {
        "system": "urn:oid:1.3.6.1.4.1.19376.1.2.3",
        "code": "urn:hl7-org:sdwg:ccda-structuredBody:2.1",
        "display": "Documents following C-CDA constraints using a structured body"
      }
    }
  ],
  "context": {
    "period": {
      "start": "2004-12-23T08:00:00+11:00",
      "end": "2004-12-23T08:01:00+11:00"
    }
  }
}
]
```

### [base]/DocumentReference?\_id={logicalid}

```
[base]/DocumentReference?_{id}
```

```
GET /DocumentReference?_id=1990
```

```
{
  "resourceType": "Bundle",
  "id": "79c24d36-872d-4dc0-ac80-907178daa522",
  "meta": {
    "lastUpdated": "2021-01-26T19:17:46.778+00:00"
  },
}
```

```

    "type": "searchset",
    "total": 1,
    "link": [
      {
        "relation": "self",
        "url": "https://<datahub_server>/DocumentReference?_id=1990"
      }
    ],
    "entry": [
      {
        "fullUrl": "https://<datahub_server>/DocumentReference/1990",
        "resource": {
          "resourceType": "DocumentReference",
          "id": "1990",
          "meta": {
            "profile": [
              "http://hl7.org/fhir/us/core/StructureDefinition/us-core-documentreference"
            ]
          },
          "text": {
            "status": "generated",
            "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b></p><p><b>id</b>: episode-summary</p><p><b>meta</b>: </p><p><b>identifier</b>: urn:oid:2.16.840.1.113883.19.5.99999.1</p><p><b>status</b>: current</p><p><b>type</b>: <span title='Codes: {http://loinc.org 34133-9}'>CCD Document</span></p><p><b>category</b>: <span title='Codes: {http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-category clinical-note}'>Clinical Note</span></p><p><b>subject</b>: <a href='Patient-example.html'>Amy Shaw. Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy V. Shaw , Amy V. Baxter ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 1987-02-20</a></p><p><b>date</b>: Mar 9, 2016, 3:29:46 PM</p><p><b>author</b>: <a href='Practitioner-practitioner-1.html'>Ronald Bone, MD. Generated Summary: id: practitioner-1; 9941339108, 25456; Ronald Bone </a></p><p><b>description</b>: Pulmonology clinic acute visit</p><h3>Contents</h3><table class='grid'><tr><td></td><td><b>Attachment</b></td><td><b>Format</b></td></tr><tr><td>*</td><td></td><td><span title='{urn:oid:1.3.6.1.4.1.19376.1.2.3 urn:hl7-org:sdwg:ccda-structuredBody:2.1}'>Documents following C-CDA constraints using a structured body</span></td></tr></table><h3>Contexts</h3><table class='grid'><tr><td></td><td><b>Period</b></td></tr><tr><td>*</td><td>Dec 22, 2004, 9:00:00 PM --> Dec 22, 2004, 9:01:00 PM</td></tr></table></div>"
          },
          "identifier": [
            {
              "system": "urn:ietf:rfc:3986",
              "value": "urn:oid:2.16.840.1.113883.19.5.99999.1"
            }
          ],
          "status": "current",
          "type": {
            "coding": [
              {
                "system": "http://loinc.org",
                "code": "34133-9",
                "display": "Summary of episode note"
              }
            ],
            "text": "CCD Document"
          },
          "category": [
            {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-category",
                  "code": "clinical-note",
                  "display": "Clinical Note"
                }
              ],
              "text": "Clinical Note"
            }
          ],
          "subject": {
            "reference": "Patient/07710040201",
            "display": "Amy Shaw"
          }
        }
      ]
    ]
  }

```

```

    "date": "2016-03-09T15:29:46Z",
    "author": [
      {
        "reference": "Practitioner-practitioner-1",
        "display": "Ronald Bone, MD"
      }
    ],
    "description": "Pulmonology clinic acute visit",
    "content": [
      {
        "attachment": {
          "contentType": "text/plain",
          "url": "/Binary/1-note",
          "title": "Uri where the data can be found: [base]/Binary/1-note"
        },
        "format": {
          "system": "urn:oid:1.3.6.1.4.1.19376.1.2.3",
          "code": "urn:hl7-org:sdwg:ccda-structuredBody:2.1",
          "display": "Documents following C-CDA constraints using a structured body"
        }
      }
    ],
    "context": {
      "period": {
        "start": "2004-12-23T08:00:00+11:00",
        "end": "2004-12-23T08:01:00+11:00"
      }
    }
  }
}

```

### [base]/DocumentReference?patient=[reference]

```
[base]/DocumentReference?patient=[reference]
```

```
GET /DocumentReference?patient=07710040201
```

```

{
  "resourceType": "Bundle",
  "id": "ddd2a59-5ea4-4d29-bcb0-5357ae6c85b6",
  "meta": {
    "lastUpdated": "2021-01-26T19:20:46.672+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/DocumentReference?patient=07710040201"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/DocumentReference/1990",
      "resource": {
        "resourceType": "DocumentReference",
        "id": "1990",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-documentreference"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></div>"
        }
      }
    }
  ]
}

```

```

/p><p><b>id</b>: episode-summary</p><p><b>meta</b>: </p><p><b>identifier</b>: urn:oid:
2.16.840.1.113883.19.5.99999.1</p><p><b>status</b>: current</p><p><b>type</b>: <span title=\"Codes:
{http://loinc.org 34133-9}\">CCD Document</span></p><p><b>category</b>: <span title=\"Codes: {http://hl7.org
/fhir/us/core/CodeSystem/us-core-documentreference-category clinical-note}\">Clinical Note</span><
/p><p><b>subject</b>: <a href=\"Patient-example.html\">Amy Shaw. Generated Summary: id: example; Medical
Record Number = 1032702 (USUAL); active; Amy V. Shaw , Amy V. Baxter ; ph: 555-555-5555(HOME), amy.
shaw@example.com; gender: female; birthDate: 1987-02-20</a></p><p><b>date</b>: Mar 9, 2016, 3:29:46 PM<
/p><p><b>author</b>: <a href=\"Practitioner-practitioner-1.html\">Ronald Bone, MD. Generated Summary: id:
practitioner-1; 9941339108, 25456; Ronald Bone </a></p><p><b>description</b>: Pulmonology clinic acute
visit</p><h3>Contents</h3><table class=\"grid\"><tr><td>-</td><td><b>Attachment</b></td><td><b>Format</b><
/td></tr><tr><td>*</td><td></td><td><span title=\"{urn:oid:1.3.6.1.4.1.19376.1.2.3 urn:hl7-org:sdwg:ccda-
structuredBody:2.1}\">Documents following C-CDA constraints using a structured body</span></td></tr><
/table><h3>Contexts</h3><table class=\"grid\"><tr><td>-</td><td><b>Period</b></td></tr><tr><td>*<
/td><td>Dec 22, 2004, 9:00:00 PM --> Dec 22, 2004, 9:01:00 PM</td></tr></table></div>\"
},
  "identifier": [
    {
      "system": "urn:ietf:rhc:3986",
      "value": "urn:oid:2.16.840.1.113883.19.5.99999.1"
    }
  ],
  "status": "current",
  "type": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "34133-9",
        "display": "Summary of episode note"
      }
    ],
    "text": "CCD Document"
  },
  "category": [
    {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-
category",
          "code": "clinical-note",
          "display": "Clinical Note"
        }
      ],
      "text": "Clinical Note"
    }
  ],
  "subject": {
    "reference": "Patient/07710040201",
    "display": "Amy Shaw"
  },
  "date": "2016-03-09T15:29:46Z",
  "author": [
    {
      "reference": "Practitioner-practitioner-1",
      "display": "Ronald Bone, MD"
    }
  ],
  "description": "Pulmonology clinic acute visit",
  "content": [
    {
      "attachment": {
        "contentType": "text/plain",
        "url": "/Binary/1-note",
        "title": "Uri where the data can be found: [base]/Binary/1-note"
      },
      "format": {
        "system": "urn:oid:1.3.6.1.4.1.19376.1.2.3",
        "code": "urn:hl7-org:sdwg:ccda-structuredBody:2.1",
        "display": "Documents following C-CDA constraints using a structured body"
      }
    }
  ]
},
],

```

```

    "context": {
      "period": {
        "start": "2004-12-23T08:00:00+11:00",
        "end": "2004-12-23T08:01:00+11:00"
      }
    }
  }
}

```

## [base]/DocumentReference?patient=[reference]&category={system}][value]

[base]/DocumentReference?patient=[reference]&category=http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-category|clinical-note

GET /DocumentReference?patient=07710040201&category=http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-category|clinical-note

```

{
  "resourceType": "Bundle",
  "id": "ddd2a59-5ea4-4d29-bcb0-5357ae6c85b6",
  "meta": {
    "lastUpdated": "2021-01-26T19:20:46.672+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/DocumentReference?patient=07710040201"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/DocumentReference/1990",
      "resource": {
        "resourceType": "DocumentReference",
        "id": "1990",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-documentreference"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b></p><p><b>id</b>: episode-summary</p><p><b>meta</b>: </p><p><b>identifier</b>: urn:oid:2.16.840.1.113883.19.5.99999.1</p><p><b>status</b>: current</p><p><b>type</b>: <span title='\"Codes: {http://loinc.org 34133-9}\">CCD Document</span></p><p><b>category</b>: <span title='\"Codes: {http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-category clinical-note}\">Clinical Note</span></p><p><b>subject</b>: <a href='\"Patient-example.html\">Amy Shaw. Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy V. Shaw , Amy V. Baxter ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 1987-02-20</a></p><p><b>date</b>: Mar 9, 2016, 3:29:46 PM</p><p><b>author</b>: <a href='\"Practitioner-practitioner-1.html\">Ronald Bone, MD. Generated Summary: id: practitioner-1; 9941339108, 25456; Ronald Bone </a></p><p><b>description</b>: Pulmonology clinic acute visit</p><h3>Contents</h3><table class='\"grid\"><tr><td>-</td><td><b>Attachment</b></td><td><b>Format</b></td></tr><tr><td>*</td><td><span title='\"urn:oid:1.3.6.1.4.1.19376.1.2.3 urn:hl7-org:sdwg:ccda-structuredBody:2.1\">Documents following C-CDA constraints using a structured body</span></td></tr></table><h3>Contexts</h3><table class='\"grid\"><tr><td>-</td><td><b>Period</b></td></tr><tr><td>*</td><td>Dec 22, 2004, 9:00:00 PM --> Dec 22, 2004, 9:01:00 PM</td></tr></table></div>"
        },
        "identifier": [
          {
            "system": "urn:ietf:rfc:3986",
            "value": "urn:oid:2.16.840.1.113883.19.5.99999.1"
          }
        ]
      }
    }
  ]
}

```



```

    ],
    "status": "current",
    "type": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "34133-9",
          "display": "Summary of episode note"
        }
      ],
      "text": "CCD Document"
    },
    "category": [
      {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-
category",
            "code": "clinical-note",
            "display": "Clinical Note"
          }
        ],
        "text": "Clinical Note"
      }
    ],
    "subject": {
      "reference": "Patient/07710040201",
      "display": "Amy Shaw"
    },
    "date": "2016-03-09T15:29:46Z",
    "author": [
      {
        "reference": "Practitioner-practitioner-1",
        "display": "Ronald Bone, MD"
      }
    ],
    "description": "Pulmonology clinic acute visit",
    "content": [
      {
        "attachment": {
          "contentType": "text/plain",
          "url": "/Binary/1-note",
          "title": "Uri where the data can be found: [base]/Binary/1-note"
        },
        "format": {
          "system": "urn:oid:1.3.6.1.4.1.19376.1.2.3",
          "code": "urn:hl7-org:sdwg:ccda-structuredBody:2.1",
          "display": "Documents following C-CDA constraints using a structured body"
        }
      }
    ],
    "context": {
      "period": {
        "start": "2004-12-23T08:00:00+11:00",
        "end": "2004-12-23T08:01:00+11:00"
      }
    }
  }
}

```

[\[base\]/DocumentReference?patient=\[reference\]&category={system}\[/value\]&date={gt|lt|ge|le}\[date\]](#)

```

[base]/DocumentReference?patient=[reference] &category=http://hl7.org/fhir/us/core/CodeSystem/us-core-
documentreference-category|clinical-note&date={gt|lt|ge|le} [date] {&date={gt|lt|ge|le} [date]}

```

```

GET /DocumentReference?patient=07710040201&category=http://hl7.org/fhir/us/core/CodeSystem/us-core-

```

```
documentreference-category|clinical-note&date=ge2016-03-09
```

```
{
  "resourceType": "Bundle",
  "id": "ddd2a59-5ea4-4d29-bcb0-5357ae6c85b6",
  "meta": {
    "lastUpdated": "2021-01-26T19:20:46.672+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/DocumentReference?patient=07710040201"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/DocumentReference/1990",
      "resource": {
        "resourceType": "DocumentReference",
        "id": "1990",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-documentreference"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b></p><p><b>id</b>: episode-summary</p><p><b>meta</b>: </p><p><b>identifier</b>: urn:oid:2.16.840.1.113883.19.5.99999.1</p><p><b>status</b>: current</p><p><b>type</b>: <span title='Codes: {http://loinc.org 34133-9}'>CCD Document</span></p><p><b>category</b>: <span title='Codes: {http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-category clinical-note}'>Clinical Note</span></p><p><b>subject</b>: <a href='Patient-example.html'>Amy Shaw. Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy V. Shaw , Amy V. Baxter ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 1987-02-20</a></p><p><b>date</b>: Mar 9, 2016, 3:29:46 PM</p><p><b>author</b>: <a href='Practitioner-practitioner-1.html'>Ronald Bone, MD. Generated Summary: id: practitioner-1; 9941339108, 25456; Ronald Bone </a></p><p><b>description</b>: Pulmonology clinic acute visit</p><h3>Contents</h3><table class='grid'><tr><td>-</td><td><b>Attachment</b></td><td><b>Format</b></td></tr><tr><td>*</td><td><span title='{urn:oid:1.3.6.1.4.1.19376.1.2.3 urn:hl7-org:sdwg:ccda-structuredBody:2.1}'>Documents following C-CDA constraints using a structured body</span></td></tr></table><h3>Contexts</h3><table class='grid'><tr><td>-</td><td><b>Period</b></td></tr><tr><td>*</td><td>Dec 22, 2004, 9:00:00 PM --> Dec 22, 2004, 9:01:00 PM</td></tr></table></div>"
        },
        "identifier": [
          {
            "system": "urn:ietf:rfc:3986",
            "value": "urn:oid:2.16.840.1.113883.19.5.99999.1"
          }
        ],
        "status": "current",
        "type": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "34133-9",
              "display": "Summary of episode note"
            }
          ],
          "text": "CCD Document"
        },
        "category": [
          {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-documentreference-category",
                "code": "clinical-note",
                "display": "Clinical Note"
              }
            ]
          }
        ]
      }
    }
  ]
}
```

```
    },
    ],
    "text": "Clinical Note"
  },
],
"subject": {
  "reference": "Patient/07710040201",
  "display": "Amy Shaw"
},
"date": "2016-03-09T15:29:46Z",
"author": [
  {
    "reference": "Practitioner-practitioner-1",
    "display": "Ronald Bone, MD"
  }
],
"description": "Pulmonology clinic acute visit",
"content": [
  {
    "attachment": {
      "contentType": "text/plain",
      "url": "/Binary/1-note",
      "title": "Uri where the data can be found: [base]/Binary/1-note"
    },
    "format": {
      "system": "urn:oid:1.3.6.1.4.1.19376.1.2.3",
      "code": "urn:hl7-org:sdwg:ccda-structuredBody:2.1",
      "display": "Documents following C-CDA constraints using a structured body"
    }
  }
],
"context": {
  "period": {
    "start": "2004-12-23T08:00:00+11:00",
    "end": "2004-12-23T08:01:00+11:00"
  }
}
}
```

---

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# Drug Formulary - Coverage Plan

## Use Case

A member wants to see which drugs are covered by their health plan. The member accesses a mobile application which calls an external endpoint to retrieve the data. The endpoint returns the data in an industry-standard format, which is then translated by the mobile application to be viewed by the member.

## Supported GET Requests

 The **subject** query parameter can be equal to **Patient, Group**, and so on. Please refer to the definition of the **subject** parameter in [Drug Formulary - PDEX - Coverage Plan](#) for the complete list of resource references to which **subject** can be set.

- GET [base]/List?subject=[reference]
- GET [base]/List?identifier=[system]][value]

## Response Parameters

The response parameters for the GET method are as follows:

- [Drug Formulary - PDEX - Coverage Plan](#)

## Error Codes

Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.

500

Internal server error.

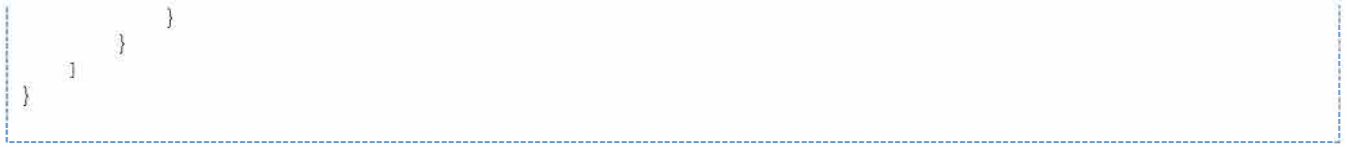
## Sample Requests and Responses

[base]/List?identifier=[system]][value] - DaVinci PDEX Plan Net

```
[base] / List ? identifier = [system] | [code]

GET /List?identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier|b72691c1-b182-4084-8aa3-f9205af1bbeb

{
  "resourceType": "Bundle",
  "id": "69ab3b50-b115-4305-b302-6d22a8077ea0",
  "meta": {
    "lastUpdated": "2021-01-25T00:56:36.681+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/List?identifier=com.cognizant.tranzform.fhir.identifiers.
logical-identifier%7Cb72691c1-b182-4084-8aa3-f9205af1bbeb"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/List/b72691c1-b182-4084-8aa3-f9205af1bbeb",
    "resource": {
      "resourceType": "List",
      "id": "b72691c1-b182-4084-8aa3-f9205af1bbeb",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-06T05:31:54.720+00:00",
        "profile": ["http://hl7.org/fhir/StructureDefinition/ListResource"],
        "tag": [{
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "ed8ec297-f9df-4420-b345-a543d4e6ee7e\t\t\t1"
        }
      ]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
    },
    "identifier": [{
      "value": "HIOS-PLAN-ID"
    }, {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "b72691c1-b182-4084-8aa3-f9205af1bbeb"
    }
  ],
  "status": "current",
  "mode": "snapshot",
  "title": "Sample Gold Health Plan",
  "date": "2015-06-12",
  "entry": [{
    "item": {
      "reference": "MedicationKnowledge/formularydrugV1002"
    }
  }
]
}
```



---

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# Drug Formulary - FormularyDrug

## Use Case

A member is taking a drug for which their health plan will soon discontinue coverage. The member authorizes a mobile application to access their health plan information to see if there are alternative drugs that can replace the drug that they are currently taking. The application calls an external endpoint which retrieves the information in an industry-standard format. The application translates the data and presents it to the member.

## Supported GET Requests

- GET [base]/MedicationKnowledge?code=[system]][value]

## Response Parameters

The response parameters for the GET method are as follows:

- [Drug Formulary - PDEX- Formulary Drug](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

## DaVinci PDEX Plan Net

```
[base] / MedicationKnowledge ? code = [system] | [value]

GET https://<datahub_server>/MedicationKnowledge?code=http://www.nlm.nih.gov/research/umls/rxnorm|1049640&_profile=http://hl7.org/fhir/us/davinci-drug-formulary/StructureDefinition/usdf-FormularyDrug

{
  "resourceType": "Bundle",
  "id": "de869738-d0a8-448c-98a0-978335aa7a38",
  "meta": {
    "lastUpdated": "2021-01-25T01:01:55.611+00:00"
  },
  "type": "searchset",
  "total": 5,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/MedicationKnowledge?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-drug-formulary%2FStructureDefinition%2Fusdf-FormularyDrug&code=http%3A%2F%2Fwww.nlm.nih.gov%2Fresearch%2Fumls%2Frnorm%7C1049640"
    }, {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=bad25279-afb1-5ae4-84ee-0f1df8bae983&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/MedicationKnowledge/10234727",
      "resource": {
        "resourceType": "MedicationKnowledge",
        "id": "10234727",
        "meta": {
          "profile": ["http://hl7.org/fhir/us/davinci-drug-formulary/StructureDefinition/usdf-FormularyDrug"]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: formularydrugV1002</p><p><b>meta</b>: </p><p><b>code</b>: Percocet 5 MG / 325 MG Oral Tablet <span style='background: LightGoldenRodYellow'>(Details : {RxNorm code '1049640' = 'Percocet 5 MG / 325 MG Oral Tablet', given as 'Percocet 5 MG / 325 MG Oral Tablet'})</span></p></div>"
        },
        "extension": [
          {
            "url": "http://hl7.org/fhir/us/davinci-drug-formulary/StructureDefinition/usdf-PriorAuthorization-extension",
            "valueBoolean": false
          }, {
            "url": "http://hl7.org/fhir/us/davinci-drug-formulary/StructureDefinition/usdf-StepTherapyLimit-extension",
            "valueBoolean": false
          }, {
            "url": "http://hl7.org/fhir/us/davinci-drug-formulary/StructureDefinition/usdf-QuantityLimit-extension",
            "valueBoolean": false
          }, {
            "url": "http://hl7.org/fhir/us/davinci-drug-formulary/StructureDefinition/usdf-PlanID-extension",
            "valueString": "40308VA0240008"
          }, {
            "url": "http://hl7.org/fhir/us/davinci-drug-formulary/StructureDefinition/usdf-DrugTierID-extension",

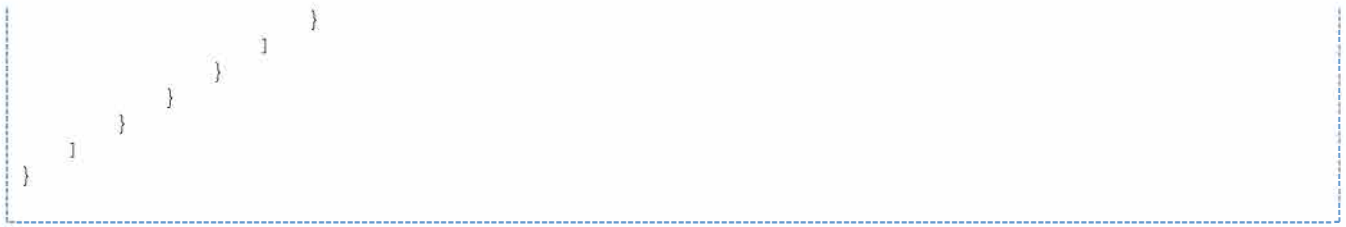
```



```

                "valueCodeableConcept": {
                  "coding": [{
                    "system": "http://hl7.org/fhir/us/davinci-drug-formulary/CodeSystem
/usdf-DrugTierCS",
                    "code": "brand",
                    "display": "Brand"
                  }
                ]
              },
            ],
            "code": {
              "coding": [{
                "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
                "code": "1049640",
                "display": "Percocet 5 MG / 325 MG Oral Tablet"
              }
            ]
          }
        }, {
          "fullUrl": "https://<datahub_server>/MedicationKnowledge/drugV1002",
          "resource": {
            "resourceType": "MedicationKnowledge",
            "id": "drugV1002",
            "meta": {
              "profile": ["http://hl7.org/fhir/us/davinci-drug-formulary/StructureDefinition/usdf-
FormularyDrug"]
            },
            "text": {
              "status": "generated",
              "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: formularydrugV1002</p><p><b>meta</b>: </p><p><b>code</b>: Percocet 5 MG / 325
MG Oral Tablet <span style='background: LightGoldenRodYellow'>(Details : {RxNorm code '1049640' =
'Percocet 5 MG / 325 MG Oral Tablet', given as 'Percocet 5 MG / 325 MG Oral Tablet'})</span></p></div>"
            },
            "extension": [{
              "url": "http://hl7.org/fhir/us/Davinci-drug-formulary/StructureDefinition/usdf-
DrugTierID-extension",
              "valueCodeableConcept": {
                "coding": [{
                  "system": "http://hl7.org/fhir/us/Davinci-drug-formulary/CodeSystem
/usdf-DrugTierCS",
                  "code": "brand",
                  "display": "Brand"
                }
              ]
            }
          ]
        }, {
          "url": "http://hl7.org/fhir/us/Davinci-drug-formulary/StructureDefinition/usdf-
PriorAuthorization-extension",
          "valueBoolean": false
        }, {
          "url": "http://hl7.org/fhir/us/Davinci-drug-formulary/StructureDefinition/usdf-
StepTherapyLimit-extension",
          "valueBoolean": false
        }, {
          "url": "http://hl7.org/fhir/us/Davinci-drug-formulary/StructureDefinition/usdf-
QuantityLimit-extension",
          "valueBoolean": false
        }, {
          "url": "http://hl7.org/fhir/us/Davinci-drug-formulary/StructureDefinition/usdf-
PlanID-extension",
          "valueString": "40308VA0240008"
        }
      ],
      "code": {
        "coding": [{
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "1049640",
          "display": "Percocet 5 MG / 325 MG Oral Tablet"
        }
      ]
    }
  ]
}

```



---

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# Encounter

## Use Case

A member accesses a mobile application to find out information about their last visit with a particular doctor. The application UI calls an external endpoint which returns the encounter information in an industry standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Encounter[id]
- GET [base]/Encounter?\_id=XXXXX
- GET [base]/Encounter?patient=[reference]
- GET [base]/Encounter?patient=[reference]&date={gt|lt|ge|le}[date]{&date={gt|lt|ge|le}[date]}

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Encounter Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

[base]/Encounter[id]

```
[base] / Encounter[id]

GET /Encounter/VN123

{
  "resourceType": "Bundle",
  "id": "eea47bc3-5844-4bbd-9f1f-199e1b0ee599",
  "meta": {
    "lastUpdated": "2021-01-26T00:21:47.075+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Encounter?_id=VN123"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Encounter/VN123",
    "resource": {
      "resourceType": "Encounter",
      "id": "VN123",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-19T03:18:48.380+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter"]
      },
      "identifier": [{
        "system": "NYU:tenant4",
        "value": "VN123"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "VN123"
      }
    ],
    "status": "in-progress",
    "class": {
      "code": "IMP",
      "display": "Inpatient"
    },
    "type": [{
      "coding": [{
        "code": "183801001",
        "display": "Inpatient stay 3 days"
      }
    ]
  },
    "serviceType": {
      "coding": [{
        "code": "382",
        "display": "Medical Services"
      }
    ]
  },
    "subject": {
      "reference": "Patient/MR123"
    },
    "period": {
      "start": "2020-07-15"
    }
  }
]
```

```

    }
  ]
}

```

## [base]/Encounter?\_id=XXXXX

```
[base] / Encounter ? _id = XXXXX
```

```
GET /Encounter?_id=VN123
```

```

{
  "resourceType": "Bundle",
  "id": "eea47bc3-5844-4bbd-9f1f-199e1b0ee599",
  "meta": {
    "lastUpdated": "2021-01-26T00:21:47.075+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Encounter?_id=VN123"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Encounter/VN123",
    "resource": {
      "resourceType": "Encounter",
      "id": "VN123",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-19T03:18:48.380+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter"]
      },
      "identifier": [{
        "system": "NYU:tenant4",
        "value": "VN123"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "VN123"
      }
    ],
    "status": "in-progress",
    "class": {
      "code": "IMP",
      "display": "Inpatient"
    },
    "type": [{
      "coding": [{
        "code": "183801001",
        "display": "Inpatient stay 3 days"
      }
    ]
  },
    "serviceType": {
      "coding": [{
        "code": "382",
        "display": "Medical Services"
      }
    ]
  },
    "subject": {
      "reference": "Patient/MR123"
    },
    "period": {
      "start": "2020-07-15"
    }
  }
]
}

```

```

    }
  }
]
}

```

## [base]/Encounter?patient=[reference]

[base] / Encounter ? patient = [reference]

GET /Encounter?patient=MR123

```

{
  "resourceType": "Bundle",
  "id": "3c325bce-8700-4bb3-9782-ffb98c36ec07",
  "meta": {
    "lastUpdated": "2021-01-26T00:20:07.120+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Encounter?patient=MR123"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Encounter/VN123",
    "resource": {
      "resourceType": "Encounter",
      "id": "VN123",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-19T03:18:48.380+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter"]
      },
      "identifier": [{
        "system": "NYU:tenant4",
        "value": "VN123"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "VN123"
      }],
      "status": "in-progress",
      "class": {
        "code": "IMP",
        "display": "Inpatient"
      },
      "type": [{
        "coding": [{
          "code": "183801001",
          "display": "Inpatient stay 3 days"
        }]
      }],
      "serviceType": {
        "coding": [{
          "code": "382",
          "display": "Medical Services"
        }]
      },
      "subject": {
        "reference": "Patient/MR123"
      }
    }
  ]
}

```

```

    "period": {
      "start": "2020-07-15"
    }
  }
}

```

[\[base\]/Encounter?patient=\[reference\]&date={gt|lt|ge|le}\[date\]{&date={gt|lt|ge|le}\[date\]}](#)

```
[base]/Encounter?patient=[reference]&date={gt|lt|ge|le}[date]{&date={gt|lt|ge|le}[date]}
```

```
GET /Encounter?patient=MR123&date=ge2020-07-14
```

```

{
  "resourceType": "Bundle",
  "id": "25200241-b1ec-42b8-99fe-6f03353648ae",
  "meta": {
    "lastUpdated": "2021-01-26T00:27:11.304+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Encounter?date=ge2020-07-14&patient=MR123"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Encounter/VN123",
    "resource": {
      "resourceType": "Encounter",
      "id": "VN123",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-19T03:18:48.380+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter"]
      },
      "identifier": [{
        "system": "NYU:tenant4",
        "value": "VN123"
      }], {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "VN123"
      }
    ],
    "status": "in-progress",
    "class": {
      "code": "IMP",
      "display": "Inpatient"
    },
    "type": [{
      "coding": [{
        "code": "183801001",
        "display": "Inpatient stay 3 days"
      }
    ]
  }],
    "serviceType": {
      "coding": [{
        "code": "382",
        "display": "Medical Services"
      }
    ]
  },
  "subject": {

```

```
    "reference": "Patient/MR123"
  },
  "period": {
    "start": "2020-07-15"
  }
}
}
```

---

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# Endpoint

## Use Case

The Endpoint resource contains the technical details of an endpoint. This can be used for electronic services, such as a web service that provides a REST endpoint for another FHIR HL7 server.

## Supported Query Parameters

**Availability:** 5.90.001.000

These query parameters can be sent in any combination.

### Query Parameters

Name	Type	Description
<a href="#">connection-type</a>	token <sup>1</sup>	Select Endpoints that support the specified protocol/profile/standard
<a href="#">identifier-assigner</a>	reference	Select Endpoints with an identifier issued by the specified organization
<a href="#">identifier</a>	token	Select Endpoints with the specified identifier
<a href="#">mime-type</a>	token	Select endpoints that support the specified media type
<a href="#">organization</a>	reference	Select Endpoints managed by the specified organization
<a href="#">payload-type</a>	token	Select Endpoints that support the specified type of content
<a href="#">status</a>	token	Select Endpoints with the specified status
<a href="#">usecase-standard</a>	uri	Select endpoints that support the specified standard
<a href="#">usecase-type</a>	token	Select endpoints that support the type of services indicated by the specified code
<a href="#">via-intermediary</a>	reference	Select Endpoints with contact information available through the specified intermediary
<a href="#">telecom-available-days</a>	token	Days available
<a href="#">telecom-available-end-time</a>	token	End time
<a href="#">telecom-available-start-time</a>	token	Start time

1. A token refers to either [system][value] or [ value]. Refer to <https://www.hl7.org/fhir/search.html#token> where the code is the Identifier.value.

## Sample GET Requests

- GET [base]/Endpoint?identifier=[system]][value]
- GET [base]/Endpoint?\_id=[logicalid]
- GET [base]/Endpoint?type=[system]][value]

## Response Parameters

The response parameters for the GET method are as follows:

- [Provider Directory - Pdex - Plan Net - Endpoint](#)

## Error Codes

Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/Endpoint?identifier=[system]][value]

```
[base] / Endpoint ? identifier = [system] | [value]
```

```
GET /Endpoint?identifier=http://terminology.hl7.org/CodeSystem/v2-0203|TAX&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Endpoint
```

```
{
  "resourceType": "Bundle",
  "id": "a1763495-2210-417b-8598-f6400353e5bb",
  "meta": {
```

```

      "lastUpdated": "2021-01-25T01:06:06.971+00:00"
    },
    "type": "searchset",
    "total": 6,
    "link": [{
      "relation": "self",
      "url": "https://<datahub_server>/Endpoint?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-
pdex-plan-net%2FStructureDefinition%2Fplannet-Endpoint&identifier=http%3A%2F%2Fterminology.hl7.org%
2FCodesystem%2Fv2-0203%7CTAX"
    }, {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=b5fec903-3557-5faa-9b53-
fba751f932b0&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Endpoint/End2002",
    "resource": {
      "resourceType": "Endpoint",
      "id": "End2002",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-12-16T13:45:16.603+05:30",
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Endpoint"],
        "tag": [{
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "f133607a-f098-4ac9-9bbf-48ea9f9d0dd4\t\t\t4"
        }
      ]
    },
    "extension": [{
      "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/endpoint-usecase",
      "extension": [{
        "url": "type",
        "valueCodeableConcept": {
          "coding": [{
            "system": "http://hl7.org/fhir/uv/vhdir/CodeSystem/usecase",
            "code": "treatment",
            "display": "treatment"
          }
        ],
        "text": "treatment"
      }
    ], {
      "url": "standard",
      "valueUri": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/endpoint-
usecase"
    }
  ]
},
  "identifier": [{
    "extension": [{
      "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/identifier-status",
      "valueCode": "active"
    }
  ],
  "use": "usual",
  "type": {
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
      "code": "TAX",
      "display": "Tax ID number"
    }
  ],
  "text": "587467"
},
  "system": "http://www.acme.com/identifiers/patient",
  "value": "587467",

```

```

        "period": {
          "start": "2012-01-01T00:00:00+05:30",
          "end": "2017-01-01T00:00:00+05:30"
        }, {
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "End2002"
      }
    ],
    "status": "active",
    "connectionType": {
      "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
      "code": "ihe-iiid",
      "display": "IHE IID"
    },
    "name": "Channel",
    "contact": [{
      "extension": [{
        "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/contactpoint-
availabletime",
        "extension": [{
          "url": "daysOfWeek",
          "valueCode": "mon"
        }, {
          "url": "daysOfWeek",
          "valueCode": "tue"
        }, {
          "url": "daysOfWeek",
          "valueCode": "wed"
        }, {
          "url": "daysOfWeek",
          "valueCode": "fri"
        }, {
          "url": "allDay",
          "valueBoolean": false
        }, {
          "url": "availableStartTime",
          "valueTime": "11:00:00"
        }, {
          "url": "availableEndTime",
          "valueTime": "20:00:00"
        }
      ]
    }
  ],
  "system": "phone",
  "value": "9789065789",
  "use": "work",
  "rank": 1,
  "period": {
    "start": "2012-01-01T00:00:00+05:30",
    "end": "2022-01-01T00:00:00+05:30"
  }
},
"period": {
  "start": "2012-01-01T00:00:00+05:30",
  "end": "2021-12-11T00:00:00+05:30"
},
"payloadType": [{
  "coding": [{
    "system": "urn:oid:1.3.6.1.4.1.19376.1.2.3",
    "code": "urn:ihe:pcc:crc:2008",
    "display": "Cancer Registry Content (CRC)"
  }
],
  "text": "Cancer Registry Content (CRC)"
}
],
"payloadMimeType": ["application/postscript"],

```

```

        "address": "http://localhost:0000/service",
        "header": ["ChannelTypes"]
    }, {
        "fullUrl": "https://<datahub_server>/Endpoint/End2004",
        "resource": {
            "resourceType": "Endpoint",
            "id": "End2004",
            "meta": {
                "versionId": "0",
                "lastUpdated": "2020-12-17T06:33:58.811+05:30",
                "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Endpoint"],
                "tag": [{
                    "system": "tranzform-apim-request-ns",
                    "code": "user-request-id",
                    "display": "1dcac57f-906c-4ee0-af78-5364bbdd89f4\t\t\t4"
                }
            ]
        },
        "extension": [{
            "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/endpoint-usecase",
            "extension": [{
                "url": "type",
                "valueCodeableConcept": {
                    "coding": [{
                        "system": "http://hl7.org/fhir/uv/vhdir/CodeSystem/usecase",
                        "code": "treatment",
                        "display": "treatment"
                    }
                ],
                "text": "treatment"
            }
        ], {
            "url": "standard",
            "valueUri": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/endpoint-
usecase"
        }
    ]
}, {
    "identifier": [{
        "use": "usual",
        "type": {
            "coding": [{
                "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
                "code": "TAX",
                "display": "Tax ID number"
            }
        ],
        "text": "587467"
    }, {
        "system": "http://www.acme.com/identifiers/patient",
        "value": "587467",
        "period": {
            "start": "2012-01-01T00:00:00+05:30",
            "end": "2017-01-01T00:00:00+05:30"
        }
    }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "End2004"
    }
],
    "status": "active",
    "connectionType": {
        "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
        "code": "ihe-iid",
        "display": "IHE IID"
    },
    "name": "Channel",

```

```
    "contact": [{
      "extension": [{
        "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/contactpoint-
availabletime",
        "extension": [{
          "url": "daysOfWeek",
          "valueCode": "mon"
        }, {
          "url": "daysOfWeek",
          "valueCode": "tue"
        }, {
          "url": "daysOfWeek",
          "valueCode": "wed"
        }, {
          "url": "daysOfWeek",
          "valueCode": "fri"
        }, {
          "url": "allDay",
          "valueBoolean": false
        }, {
          "url": "availableStartTime",
          "valueTime": "11:00:00"
        }, {
          "url": "availableEndTime",
          "valueTime": "20:00:00"
        }
      ]
    },
    {
      "system": "phone",
      "value": "9789065789",
      "use": "work",
      "rank": 1,
      "period": {
        "start": "2012-01-01T00:00:00+05:30",
        "end": "2022-01-01T00:00:00+05:30"
      }
    }
  ],
  "period": {
    "start": "2012-01-01T00:00:00+05:30",
    "end": "2021-12-11T00:00:00+05:30"
  },
  "payloadType": [{
    "coding": [{
      "system": "urn:oid:1.3.6.1.4.1.19376.1.2.3",
      "code": "urn:ihe:pcc:crc:2008",
      "display": "Cancer Registry Content (CRC)"
    }
  ],
  "text": "Cancer Registry Content (CRC)"
}],
  "payloadMimeType": ["application/postscript"],
  "address": "http://localhost:0000/service",
  "header": ["ChannelTypes"]
}
```

### [\[base\]/Endpoint?\\_id=\[logicalid\]](#)

```
[base] / Endpoint ? _id = [logicalid]
```

```
GET /Endpoint?_id=End2012&_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-Endpoint"
```

```

{
  "resourceType": "Bundle",
  "id": "287242ed-9232-423a-ab3f-3e311b71bcf5",
  "meta": {
    "lastUpdated": "2021-01-25T01:10:07.965+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Endpoint?_id=End2012&_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-Endpoint"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Endpoint/End2012",
    "resource": {
      "resourceType": "Endpoint",
      "id": "End2012",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-12-16T13:45:16.603+05:30",
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Endpoint"],
        "tag": [{
          "system": "http://terminology.hl7.org/CodeSystem/common-tags",
          "code": "user-request-id",
          "display": "8e60448d-e363-47a4-ac0b-134abca8f455\t\t\t\t4"
        }]
      },
      "extension": [{
        "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/endpoint-usecase",
        "extension": [{
          "url": "type",
          "valueCodeableConcept": {
            "coding": [{
              "system": "http://hl7.org/fhir/uv/vhdir/CodeSystem/usecase",
              "code": "treatment",
              "display": "treatment"
            }]
          },
          "text": "treatment"
        }],
        "url": "standard",
        "valueUri": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/endpoint-usecase"
      }],
      "identifier": [{
        "extension": [{
          "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/identifier-status",
          "valueCode": "active"
        }],
        "use": "usual",
        "type": {
          "coding": [{
            "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
            "code": "TAX",
            "display": "Tax ID number"
          }],
          "text": "587467"
        },
        "system": "http://www.acme.com/identifiers/patient",
        "value": "587467",

```

```

        "period": {
          "start": "2012-01-01T00:00:00+05:30",
          "end": "2017-01-01T00:00:00+05:30"
        }, {
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "End2012"
      }
    ],
    "status": "active",
    "connectionType": {
      "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
      "code": "ihe-iid",
      "display": "IHE IID"
    },
    "name": "Channel",
    "contact": [{
      "extension": [{
        "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/contactpoint-
availabletime",
        "extension": [{
          "url": "daysOfWeek",
          "valueCode": "mon"
        }, {
          "url": "daysOfWeek",
          "valueCode": "tue"
        }, {
          "url": "daysOfWeek",
          "valueCode": "wed"
        }, {
          "url": "daysOfWeek",
          "valueCode": "fri"
        }, {
          "url": "allDay",
          "valueBoolean": false
        }, {
          "url": "availableStartTime",
          "valueTime": "11:00:00"
        }, {
          "url": "availableEndTime",
          "valueTime": "20:00:00"
        }
      ]
    }
  ],
  "system": "phone",
  "value": "9789065789",
  "use": "work",
  "rank": 1,
  "period": {
    "start": "2012-01-01T00:00:00+05:30",
    "end": "2022-01-01T00:00:00+05:30"
  }
},
"period": {
  "start": "2012-01-01T00:00:00+05:30",
  "end": "2021-12-11T00:00:00+05:30"
},
"payloadType": [{
  "coding": [{
    "system": "urn:oid:1.3.6.1.4.1.19376.1.2.3",
    "code": "urn:ihe:pcc:crc:2008",
    "display": "Cancer Registry Content (CRC)"
  }
],
  "text": "Cancer Registry Content (CRC)"
}
],
"payloadMimeType": ["application/postscript"],

```



```
    "address": "http://localhost:0000/service",  
    "header": ["ChannelTypes"]  
  }  
}
```

---

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# ExplanationOfBenefit

## Use Case

A member downloads a mobile application and authorizes it to access their EOB data on the member's behalf (so they can view it). When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the EOB data and returns it in the industry-standard format. The EOB data is then translated by the mobile application for display to the member.

## Supported GET Requests

- GET [base]/ExplanationOfBenefit?patient=[reference]
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX&created={gt|lt|ge|le}[date]&date={gt|lt|ge|le}[date]
- GET [base]/ExplanationOfBenefit?identifier=[system]][value]
- GET [base]/ExplanationOfBenefit/[id]

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN-BB ExplanationOfBenefit](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.

422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/ExplanationOfBenefit?identifier=[system]][value]

```
[base]/ExplanationOfBenefit?identifier=[system] | [value]

GET /ExplanationOfBenefit?identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier|EOBV3

{
  "resourceType": "Bundle",
  "id": "25a3dd62-489c-4fed-b191-5c7a746c572d",
  "meta": {
    "lastUpdated": "2021-01-27T21:16:15.780+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/ExplanationOfBenefit?identifier=com.cognizant.tranzform.fhir.
identifiers.logical-identifier%7CEOBV3"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/EOBV3",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "EOBV3",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/ExplainofBenefit"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "3c509ab4-c82b-4652-b96f-3e5afe2b287b\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
        },
        "identifier": [
          {
            "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
            "value": "4E93-BE91-EAC1977941A8"
          },
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "EOBV3"
          }
        ]
      }
    }
  ]
}
```

```

    "status": "active",
    "type": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-claim-type",
          "code": "professional-nonclinician",
          "display": "professional-nonclinician"
        }
      ]
    },
    "use": "claim",
    "patient": {
      "reference": "Patient/Patient1"
    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "clmrecvddate"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "adjudication": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
              "code": "innetworkbenefitpaymentstatus"
            }
          ]
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        }
      }
    ]
  }
}

```

```

    },
    "amount": {
      "value": 9000
    }
  }
}

```

## [base]/ExplanationOfBenefit/[id]

[base]/ExplanationOfBenefit/[id]

GET /ExplanationOfBenefit/EOBV3

```

{
  "resourceType": "ExplanationOfBenefit",
  "id": "EOBV3",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2019-12-18T22:49:23.000-05:00",
    "profile": [
      "http://hl7.org/fhir/StructureDefinition/ExplanationOfBenefit"
    ],
    "tag": [
      {
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "3c509ab4-c82b-4652-b96f-3e5afe2b287b\t\t\t1"
      }
    ]
  },
  "text": {
    "status": "generated",
    "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
  },
  "identifier": [
    {
      "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-identifier",
      "value": "4E93-BE91-EAC1977941A8"
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "EOBV3"
    }
  ],
  "status": "active",
  "type": {
    "coding": [
      {
        "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-claim-type",
        "code": "professional-nonclinician",
        "display": "professional-nonclinician"
      }
    ]
  },
  "use": "claim",
  "patient": {
    "reference": "Patient/Patient1"
  },
  "created": "2015-02-07T13:28:17-05:00",
  "enterer": {
    "reference": "PractitionerRole/PractitionerRole1"
  }
}

```

```

    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-
claiminformationcategory",
              "code": "clmrecvddate"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "adjudication": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-adjudicationcategory",
              "code": "innetworkbenefitpaymentstatus"
            }
          ]
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  }
}

```

---

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# ExplanationOfBenefit - Inpatient Facility

## Use Case

A member downloads a mobile application and authorizes it to access their EOB data for their claims when they had services performed by a hospital, clinic, or other facility as an inpatient. . When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the inpatient EOB data and returns it in the industry-standard format . The EOB data is then translated by the mobile application for display to the member.

## Supported GET Requests

- GET [base]/ExplanationOfBenefit?patient=[reference]
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX&created={gt|lt|ge|le}[date]&date={gt|lt|ge|le}[date]
- GET [base]/ExplanationOfBenefit?identifier=[system]][value]
- GET [base]/ExplanationOfBenefit/[id]

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN-BB ExplanationOfBenefit- Inpatient-Facility](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.



422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/ExplanationOfBenefit?patient=[reference]

```
[base]/ExplanationOfBenefit?patient=[reference]
GET /ExplanationOfBenefit?patient=Patient2

{
  "resourceType": "Bundle",
  "id": "e11be496-3045-4144-860f-4b206302f278",
  "meta": {
    "lastUpdated": "2021-01-27T21:21:32.629+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/ExplanationOfBenefit?patient=Patient2"
    },
    {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=034e19bf-5f29-5f9a-bfc2-158142108832&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/673ab96c-ddca-4e76-beb6-b19482bbfced",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "673ab96c-ddca-4e76-beb6-b19482bbfced",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/ExplainofBenefit"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "5025759d-c516-4558-97b4-2006f72e30bc\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t\t</p>\n\t\t\t\t\t</div>"
        },
        "identifier": [
          {
            "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-identifier",
            "value": "4E93-BE91-EAC1977941A8"
          },
          {
            "use": "official",

```

```

        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "673ab96c-ddca-4e76-beb6-b19482bbfced"
      }
    ],
    "status": "active",
    "type": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-claim-type",
          "code": "inpatient-facility",
          "display": "Inpatient Facility"
        }
      ]
    },
    "use": "claim",
    "patient": {
      "reference": "Patient/Patient2"
    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-
claiminformationcategory",
              "code": "clmrecvddate"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  },
  {

```

```

"fullUrl": "https://<datahub_server>/ExplanationOfBenefit/5e9e9636-dac6-4984-8a03-49a9d53d5d24",
"resource": {
  "resourceType": "ExplanationOfBenefit",
  "id": "5e9e9636-dac6-4984-8a03-49a9d53d5d24",
  "meta": {
    "profile": [
      "http://tzf.com/fhir/StructureDefinition/ExplainofBenefit"
    ]
  },
  "identifier": [
    {
      "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
      "value": "4E93-BE91-EAC1977941A8"
    }
  ],
  "patient": {
    "reference": "Patient/Patient2"
  }
}
}
}
}

```

### [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX

```

[base]/ExplanationOfBenefit?patient=[reference]&status=XXXX
GET /ExplanationOfBenefit?patient=Patient2&status=active
{
  "resourceType": "Bundle",
  "id": "a4659d4b-94b0-42e6-8265-b52bbf2133d4",
  "meta": {
    "lastUpdated": "2021-01-27T21:25:16.821+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/ExplanationOfBenefit?patient=Patient2&status=active"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/673ab96c-ddca-4e76-beb6-b19482bbfced",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "673ab96c-ddca-4e76-beb6-b19482bbfced",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/ExplainofBenefit"
          ]
        },
        "tag": [
          {
            "system": "tranzform-apim-request-ns",
            "code": "user-request-id",
            "display": "5025759d-c516-4558-97b4-2006f72e30bc\t\t\t1"
          }
        ],
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
        }
      }
    }
  ]
}

```

```

    },
    "identifier": [
      {
        "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
        "value": "4E93-BE91-EAC1977941A8"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "673ab96c-ddca-4e76-beb6-b19482bbfced"
      }
    ],
    "status": "active",
    "type": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-claim-type",
          "code": "inpatient-facility",
          "display": "Inpatient Facility"
        }
      ]
    },
    "use": "claim",
    "patient": {
      "reference": "Patient/Patient2"
    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-
claiminformationcategory",
              "code": "clmrecvddate"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        }
      }
    ]
  }
}

```

```

    },
    "amount": {
      "value": 9000
    }
  ]
},
{
  "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/d515d20a-bd65-4e4d-8823-64d61740aedef",
  "resource": {
    "resourceType": "ExplanationOfBenefit",
    "id": "d515d20a-bd65-4e4d-8823-64d61740aedef",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2019-12-18T22:49:23.000-05:00",
      "profile": [
        "http://tzf.com/fhir/StructureDefinition/ExplainofBenefit"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "3c88df18-a3d5-48e9-9f25-23772b4c8935\t\t\t1"
        }
      ]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
    },
    "identifier": [
      {
        "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
        "value": "4E93-BE91-EAC1977941A8"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "d515d20a-bd65-4e4d-8823-64d61740aedef"
      }
    ],
    "status": "active",
    "type": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-claim-type",
          "code": "inpatient-facility",
          "display": "Inpatient Facility"
        }
      ]
    },
    "use": "claim",
    "patient": {
      "reference": "Patient/Patient2"
    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {

```

```

        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "clmrecvddate"
            }
          ],
          "timingDate": "2017-04-12"
        },
      ],
      "insurance": [
        {
          "focal": true,
          "coverage": {
            "reference": "Coverage/Coverage1"
          }
        }
      ],
      "total": [
        {
          "category": {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
                "code": "submittedamount"
              }
            ],
            "amount": {
              "value": 9000
            }
          }
        }
      ]
    }
  ]
}

```

[\[base\]/ExplanationOfBenefit?patient=\[reference\]&status=XXXX&created={gt|lt|ge|le}\[date\]{&date={gt|lt|ge|le}\[date\]](#)

```
[base]/ExplanationOfBenefit?patient= [reference] &status=XXXX&created={gt|lt|ge|le} [date] {&date={gt|lt|ge|le} [date]
```

```
GET /ExplanationOfBenefit?patient=Patient2&status=active&created=ge2015-02-07
```

```

{
  "resourceType": "Bundle",
  "id": "70323be6-d42f-48f7-b0a1-e5df72fcce91",
  "meta": {
    "lastUpdated": "2021-01-27T21:27:08.470+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/ExplanationOfBenefit?created=ge2015-02-
07&patient=Patient2&status=active"
    }
  ],
  "entry": [
    {

```

```

"fullUrl": "https://<datahub_server>/ExplanationOfBenefit/673ab96c-ddca-4e76-beb6-b19482bbfced",
"resource": {
  "resourceType": "ExplanationOfBenefit",
  "id": "673ab96c-ddca-4e76-beb6-b19482bbfced",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2019-12-18T22:49:23.000-05:00",
    "profile": [
      "http://tzf.com/fhir/StructureDefinition/ExplainofBenefit"
    ],
    "tag": [
      {
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "5025759d-c516-4558-97b4-2006f72e30bc\t\t\t1"
      }
    ]
  },
  "text": {
    "status": "generated",
    "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
  },
  "identifier": [
    {
      "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
      "value": "4E93-BE91-EAC1977941A8"
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "673ab96c-ddca-4e76-beb6-b19482bbfced"
    }
  ],
  "status": "active",
  "type": {
    "coding": [
      {
        "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-claim-type",
        "code": "inpatient-facility",
        "display": "Inpatient Facility"
      }
    ]
  },
  "use": "claim",
  "patient": {
    "reference": "Patient/Patient2"
  },
  "created": "2015-02-07T13:28:17-05:00",
  "enterer": {
    "reference": "PractitionerRole/PractitionerRole1"
  },
  "insurer": {
    "reference": "Organization/Org45"
  },
  "provider": {
    "reference": "Organization/Org45"
  },
  "outcome": "complete",
  "supportingInfo": [
    {
      "sequence": 3,
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-
claiminformationcategory",
            "code": "clmrecvddate"
          }
        ]
      }
    }
  ]
}

```

```

        },
        "timingDate": "2017-04-12"
    },
    ],
    "insurance": [
        {
            "focal": true,
            "coverage": {
                "reference": "Coverage/Coverage1"
            }
        }
    ],
    "total": [
        {
            "category": {
                "coding": [
                    {
                        "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-
adjudicationcategory",
                        "code": "submittedamount"
                    }
                ]
            },
            "amount": {
                "value": 9000
            }
        }
    ]
},
{
    "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/d515d20a-bd65-4e4d-8823-64d61740aefd",
    "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "d515d20a-bd65-4e4d-8823-64d61740aefd",
        "meta": {
            "versionId": "1",
            "lastUpdated": "2019-12-18T22:49:23.000-05:00",
            "profile": [
                "http://tzf.com/fhir/StructureDefinition/ExplainofBenefit"
            ],
            "tag": [
                {
                    "system": "tranzform-apim-request-ns",
                    "code": "user-request-id",
                    "display": "3c88df18-a3d5-48e9-9f25-23772b4c8935\t\t\t1"
                }
            ]
        },
        "text": {
            "status": "generated",
            "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
        },
        "identifier": [
            {
                "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
                "value": "4E93-BE91-EAC1977941A8"
            },
            {
                "use": "official",
                "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
                "value": "d515d20a-bd65-4e4d-8823-64d61740aefd"
            }
        ],
        "status": "active",
        "type": {
            "coding": [
                {
                    "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-claim-type",

```



```

        "code": "inpatient-facility",
        "display": "Inpatient Facility"
      }
    ],
  },
  "use": "claim",
  "patient": {
    "reference": "Patient/Patient2"
  },
  "created": "2015-02-07T13:28:17-05:00",
  "enterer": {
    "reference": "PractitionerRole/PractitionerRole1"
  },
  "insurer": {
    "reference": "Organization/Org45"
  },
  "provider": {
    "reference": "Organization/Org45"
  },
  "outcome": "complete",
  "supportingInfo": [
    {
      "sequence": 3,
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-
claiminformationcategory",
            "code": "clmrecvddate"
          }
        ]
      },
      "timingDate": "2017-04-12"
    }
  ],
  "insurance": [
    {
      "focal": true,
      "coverage": {
        "reference": "Coverage/Coverage1"
      }
    }
  ],
  "total": [
    {
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-
adjudicationcategory",
            "code": "submittedamount"
          }
        ]
      },
      "amount": {
        "value": 9000
      }
    }
  ]
}

```

[\[base\]/ExplanationOfBenefit?identifier=\[system\]\[value\]](#)

[base]/ExplanationOfBenefit?identifier=[system] | [value]

```

GET /ExplanationOfBenefit?identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier|d515d20a-
bd65-4e4d-8823-64d61740aedf

{
  "resourceType": "Bundle",
  "id": "e96a4c1f-3d55-4113-86e2-6d6dd81f8026",
  "meta": {
    "lastUpdated": "2021-01-27T21:31:12.083+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%
2Fcarin%2FStructureDefinition%2Fcarin-bb-explanationofbenefit-inpatient-facility&identifier=com.cognizant.
tranzform.fhir.identifiers.logical-identifier%7Cd515d20a-bd65-4e4d-8823-64d61740aedf"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/d515d20a-bd65-4e4d-8823-64d61740aedf",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "d515d20a-bd65-4e4d-8823-64d61740aedf",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-explanationofbenefit-
inpatient-facility"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "3c88df18-a3d5-48e9-9f25-23772b4c8935\t\t1"
            }
          ],
          "text": {
            "status": "generated",
            "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
          },
          "identifier": [
            {
              "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
              "value": "4E93-BE91-EAC1977941A8"
            },
            {
              "use": "official",
              "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
              "value": "d515d20a-bd65-4e4d-8823-64d61740aedf"
            }
          ],
          "status": "active",
          "type": {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-claim-type",
                "code": "inpatient-facility",
                "display": "Inpatient Facility"
              }
            ],
            "use": "claim",
            "patient": {
              "reference": "Patient/Patient2"
            }
          }
        }
      }
    }
  ]
}

```

```

    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-
claiminformationcategory",
              "code": "clmrecvddate"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  ]
}

```

### [base]/ExplanationOfBenefit/[id]

```
[base]/ExplanationOfBenefit/{id}
```

```
GET /ExplanationOfBenefit/d515d20a-bd65-4e4d-8823-64d61740aedf
```

```

{
  "resourceType": "Bundle",
  "id": "e96a4c1f-3d55-4113-86e2-6d6dd81f8026",
  "meta": {
    "lastUpdated": "2021-01-27T21:31:12.083+00:00"
  }
}

```

```

    },
    "type": "searchset",
    "total": 1,
    "link": [
      {
        "relation": "self",
        "url": "https://<datahub_server>/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%
2Fcarin%2FStructureDefinition%2Fcarin-bb-explanationofbenefit-inpatient-facility&identifier=com.cognizant.
tranzform.fhir.identifiers.logical-identifier%7Cd515d20a-bd65-4e4d-8823-64d61740aedef"
      }
    ],
    "entry": [
      {
        "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/d515d20a-bd65-4e4d-8823-64d61740aedef",
        "resource": {
          "resourceType": "ExplanationOfBenefit",
          "id": "d515d20a-bd65-4e4d-8823-64d61740aedef",
          "meta": {
            "versionId": "1",
            "lastUpdated": "2019-12-18T22:49:23.000-05:00",
            "profile": [
              "http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-explanationofbenefit-
inpatient-facility"
            ],
            "tag": [
              {
                "system": "tranzform-apim-request-ns",
                "code": "user-request-id",
                "display": "3c88df18-a3d5-48e9-9f25-23772b4c8935\t\t\t1"
              }
            ],
            "text": {
              "status": "generated",
              "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
            },
            "identifier": [
              {
                "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
                "value": "4E93-BE91-EAC1977941A8"
              },
              {
                "use": "official",
                "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
                "value": "d515d20a-bd65-4e4d-8823-64d61740aedef"
              }
            ],
            "status": "active",
            "type": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-claim-type",
                  "code": "inpatient-facility",
                  "display": "Inpatient Facility"
                }
              ]
            },
            "use": "claim",
            "patient": {
              "reference": "Patient/Patient2"
            },
            "created": "2015-02-07T13:28:17-05:00",
            "enterer": {
              "reference": "PractitionerRole/PractitionerRole1"
            },
            "insurer": {
              "reference": "Organization/Org45"
            },
            "provider": {

```

```

        "reference": "Organization/Org45"
      },
      "outcome": "complete",
      "supportingInfo": [
        {
          "sequence": 3,
          "category": {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
                "code": "clmrecvddate"
              }
            ]
          },
          "timingDate": "2017-04-12"
        }
      ],
      "insurance": [
        {
          "focal": true,
          "coverage": {
            "reference": "Coverage/Coverage1"
          }
        }
      ],
      "total": [
        {
          "category": {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
                "code": "submittedamount"
              }
            ]
          },
          "amount": {
            "value": 9000
          }
        }
      ]
    ]
  }
}

```

---

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# ExplanationOfBenefit - Outpatient Facility

## Use Case

A member downloads a mobile application and authorizes it to access their EOB data for their claims when they had services performed by a hospital, clinic, or other facility as an outpatient. When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the outpatient EOB data and returns it in the industry-standard format. The EOB data is then translated by the mobile application for display to the member.

## Supported GET Requests

- GET [base]/ExplanationOfBenefit?patient=[reference]
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX&created={gt|lt|ge|le}[date]&date={gt|lt|ge|le}[date]
- GET [base]/ExplanationOfBenefit?identifier=[system]][value]
- GET [base]/ExplanationOfBenefit/[id]

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN-BB- ExplanationOfBenefit- Outpatient-Facility](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.

422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/ExplanationOfBenefit?patient=[reference]

```
[base]/ExplanationOfBenefit?patient=[reference]

GET /ExplanationOfBenefit?patient=Patient4&_profile=http://hl7.org/fhir/us/car/StructureDefinition/carin-bb-explanationofbenefit-outpatient-facility

{
  "resourceType": "Bundle",
  "id": "6d888d1e-1a14-4dd5-8fa9-7f1d51454ac1",
  "meta": {
    "lastUpdated": "2021-01-27T21:36:20.138+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/datahub/fhir/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%2FStructureDefinition%2Fcarin-bb-explanationofbenefit-outpatient-facility&created=ge2015-02-07&patient=Patient4&status=active"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/datahub/fhir/ExplanationOfBenefit/84a9dc6c-5809-4112-8a8a-c84dbdfec74",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "84a9dc6c-5809-4112-8a8a-c84dbdfec74",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/car/StructureDefinition/carin-bb-explanationofbenefit-outpatient-facility"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "f54f2aa5-82a4-437a-94a1-8fc4eabfd180\t\t\t1"
            }
          ],
          "text": {
            "status": "generated",
            "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t\t</p>\n\t\t\t\t\t</div>"
          },
          "identifier": [
            {
              "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-identifier",
              "value": "4E93-BE91-EAC1977941A8"
            },
            {
              "use": "official",

```

```

        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "84a9dc6c-5809-4112-8a8a-c84dbdfeec74"
      }
    ],
    "status": "active",
    "type": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-claim-type",
          "code": "outpatient-facility",
          "display": "outpatient-facility"
        }
      ]
    },
    "use": "claim",
    "patient": {
      "reference": "Patient/Patient4"
    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 1,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "placeofservice"
            }
          ]
        }
      },
      {
        "sequence": 2,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "discharge-status"
            }
          ]
        }
      },
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "admtypé"
            }
          ]
        }
      }
    ],
    "timingDate": "2017-04-12"
  },
  "insurance": [
    {
      "focal": true,

```



```

        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      ],
      "total": [
        {
          "category": {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
                "code": "submittedamount"
              }
            ],
            "amount": {
              "value": 9000
            }
          }
        }
      ]
    }
  ]
}

```

### [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX

```

[base]/ExplanationOfBenefit?patient=[reference]&status=XXXX

GET /ExplanationOfBenefit?patient=Patient4&status=active&_profile=http://hl7.org/fhir/us/carín
/StructureDefinition/carín-bb-explanationofbenefit-outpatient-facility

{
  "resourceType": "Bundle",
  "id": "6d888d1e-1a14-4dd5-8fa9-7f1d51454ac1",
  "meta": {
    "lastUpdated": "2021-01-27T21:36:20.138+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/datahub/fhir/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.
org%2Ffhir%2Fus%2Fcarín%2FStructureDefinition%2Fcarín-bb-explanationofbenefit-outpatient-
facility&created=ge2015-02-07&patient=Patient4&status=active"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/datahub/fhir/ExplanationOfBenefit/84a9dc6c-5809-4112-8a8a-
c84dbdfec74",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "84a9dc6c-5809-4112-8a8a-c84dbdfec74",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-explanationofbenefit-
outpatient-facility"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",

```

```

        "display": "f54f2aa5-82a4-437a-94a1-8fc4eabfd180\t\t1"
      }
    ],
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\\">\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
    },
    "identifier": [
      {
        "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
        "value": "4E93-BE91-EAC1977941A8"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "84a9dc6c-5809-4112-8a8a-c84dbdfec74"
      }
    ],
    "status": "active",
    "type": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-claim-type",
          "code": "outpatient-facility",
          "display": "outpatient-facility"
        }
      ]
    },
    "use": "claim",
    "patient": {
      "reference": "Patient/Patient4"
    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 1,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "placeofservice"
            }
          ]
        }
      },
      {
        "sequence": 2,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "discharge-status"
            }
          ]
        }
      }
    ]
  },
}

```

```

    {
      "sequence": 3,
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
            "code": "admtype"
          }
        ]
      },
      "timingDate": "2017-04-12"
    },
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  ]
}

```

[\[base\]/ExplanationOfBenefit?patient=\[reference\]&status=XXXX&created={gt|lt|ge|le}\[date\]{&date={gt|lt|ge|le}\[date\]](#)

```

[base]/ExplanationOfBenefit?patient=[reference]&status=XXXX&created={gt|lt|ge|le}[date]{&date={gt|lt|ge|le}[date]

GET /ExplanationOfBenefit?patient=Patient4&status=active&created=ge2015-02-07&_profile=http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-explanationofbenefit-outpatient-facility

{
  "resourceType": "Bundle",
  "id": "6d888d1e-1a14-4dd5-8fa9-7f1d51454ac1",
  "meta": {
    "lastUpdated": "2021-01-27T21:36:20.138+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/datahub/fhir/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarín%2FStructureDefinition%2Fcarín-bb-explanationofbenefit-outpatient-facility&created=ge2015-02-07&patient=Patient4&status=active"
    }
  ],
  "entry": [

```

```

    {
      "fullUrl": "https://<datahub_server>/datahub/fhir/ExplanationOfBenefit/84a9dc6c-5809-4112-8a8a-c84dbdfec74",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "84a9dc6c-5809-4112-8a8a-c84dbdfec74",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/car/StructureDefinition/car/BB-ExplanationOfBenefit-outpatient-facility"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "f54f2aa5-82a4-437a-94a1-8fc4eabfd180\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
        },
        "identifier": [
          {
            "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-identifier",
            "value": "4E93-BE91-EAC1977941A8"
          },
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "84a9dc6c-5809-4112-8a8a-c84dbdfec74"
          }
        ],
        "status": "active",
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/car/CodeSystem/car/BB-claim-type",
              "code": "outpatient-facility",
              "display": "outpatient-facility"
            }
          ]
        },
        "use": "claim",
        "patient": {
          "reference": "Patient/Patient4"
        },
        "created": "2015-02-07T13:28:17-05:00",
        "enterer": {
          "reference": "PractitionerRole/PractitionerRole1"
        },
        "insurer": {
          "reference": "Organization/Org45"
        },
        "provider": {
          "reference": "Organization/Org45"
        },
        "outcome": "complete",
        "supportingInfo": [
          {
            "sequence": 1,
            "category": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/car/CodeSystem/car/BB-claiminformationcategory",

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```

        "code": "placeofservice"
      }
    ],
    {
      "sequence": 2,
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
            "code": "discharge-status"
          }
        ]
      },
      "sequence": 3,
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
            "code": "admtpe"
          }
        ]
      },
      "timingDate": "2017-04-12"
    }
  ],
  "insurance": [
    {
      "focal": true,
      "coverage": {
        "reference": "Coverage/Coverage1"
      }
    }
  ],
  "total": [
    {
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
            "code": "submittedamount"
          }
        ]
      },
      "amount": {
        "value": 9000
      }
    }
  ]
}

```

### [base]/ExplanationOfBenefit?identifier=[system][value]

[base]/ExplanationOfBenefit?identifier=[system] | [value]

```

GET /ExplanationOfBenefit?identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier|84a9dc6c-
5809-4112-8a8a-c84dbdfec74&_profile=http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-
explanationofbenefit-outpatient-facility

```

```

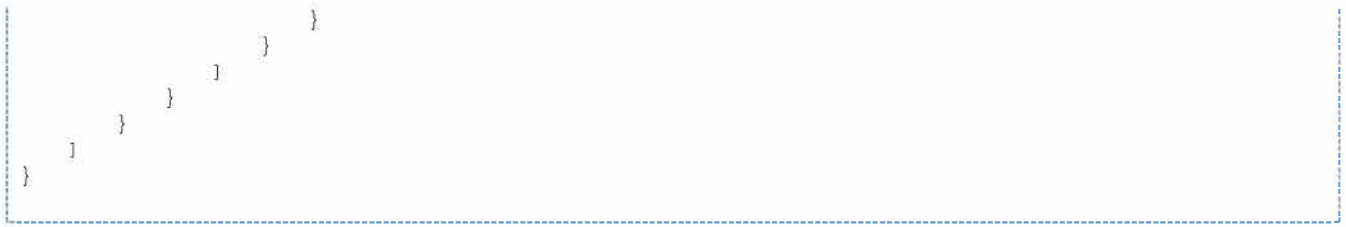
{
  "resourceType": "Bundle",
  "id": "c7696d8e-ce67-46d2-8e46-b8e8ac0bbec3",
  "meta": {
    "lastUpdated": "2021-01-27T21:33:42.013+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/datahub/fhir/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%2FStructureDefinition%2Fcarin-bb-explanationofbenefit-outpatient-facility&identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier%7C84a9dc6c-5809-4112-8a8a-c84dbdfeec74"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/datahub/fhir/ExplanationOfBenefit/84a9dc6c-5809-4112-8a8a-c84dbdfeec74",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "84a9dc6c-5809-4112-8a8a-c84dbdfeec74",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-explanationofbenefit-outpatient-facility"
          ]
        },
        "tag": [
          {
            "system": "tranzform-apim-request-ns",
            "code": "user-request-id",
            "display": "f54f2aa5-82a4-437a-94a1-8fc4eabfd180\t\t\t1"
          }
        ],
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
        },
        "identifier": [
          {
            "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-identifier",
            "value": "4E93-BE91-EAC1977941A8"
          },
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "84a9dc6c-5809-4112-8a8a-c84dbdfeec74"
          }
        ],
        "status": "active",
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-claim-type",
              "code": "outpatient-facility",
              "display": "outpatient-facility"
            }
          ]
        },
        "use": "claim",
        "patient": {
          "reference": "Patient/Patient4"
        }
      }
    }
  ]
}

```

```

    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 1,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/car/CodeSystem/car/claiminformationcategory",
              "code": "placeofservice"
            }
          ]
        }
      },
      {
        "sequence": 2,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/car/CodeSystem/car/claiminformationcategory",
              "code": "discharge-status"
            }
          ]
        }
      },
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/car/CodeSystem/car/claiminformationcategory",
              "code": "admtyp"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/car/CodeSystem/car/claiminformationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  }
}

```



---

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# ExplanationOfBenefit - Pharmacy

## Use Case

A member downloads a mobile application and authorizes it to access their EOB data for their claims that were submitted by a retail pharmacy. When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the pharmacy EOB data and returns it in the industry-standard format. The EOB data is then translated by the mobile application for display to the member.

## Supported GET Requests

- GET [base]/ExplanationOfBenefit?patient=[reference]
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX&created={gt|lt|ge|le}[date]&date={gt|lt|ge|le}[date]
- GET [base]/ExplanationOfBenefit?identifier=[system]][value]
- GET [base]/ExplanationOfBenefit/[id]

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN-BB- ExplanationOfBenefit- Pharmacy](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.

422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/ExplanationOfBenefit?patient=[reference]

```
[base]/ExplanationOfBenefit?patient=[reference]

GET /ExplanationOfBenefit?patient=Patient1&_profile=http://hl7.org/fhir/us/car/StructureDefinition/carin-bb-explanationofbenefit-pharmacy

{
  "resourceType": "Bundle",
  "id": "377fdf2c-54fa-4a8e-89d3-ae9ae69c7c6b",
  "meta": {
    "lastUpdated": "2021-01-27T21:39:54.633+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%2FStructureDefinition%2Fcarin-bb-explanationofbenefit-pharmacy&created=ge2015-02-07&patient=Patient1&status=active"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/85a26580-4dc7-49ae-8ca9-03004940853a",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "85a26580-4dc7-49ae-8ca9-03004940853a",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/car/StructureDefinition/carin-bb-explanationofbenefit-pharmacy"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "bb6eb695-50d9-492a-9372-971e0a263a06\t\t\t1"
            }
          ],
          "text": {
            "status": "generated",
            "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t\t</p>\n\t\t\t\t\t</div>"
          },
          "identifier": [
            {
              "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-identifier",
              "value": "4E93-BE91-EAC1977941A8"
            },
            {
              "use": "official",
            }
          ]
        }
      }
    }
  ]
}
```

```

        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "85a26580-4dc7-49ae-8ca9-03004940853a"
      }
    ],
    "status": "active",
    "type": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-claim-type",
          "code": "pharmacy",
          "display": "pharmacy"
        }
      ]
    },
    "use": "claim",
    "patient": {
      "reference": "Patient/Patient1"
    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "placeofservice"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  },
  {

```

```

"fullUrl": "https://<datahub_server>/ExplanationOfBenefit/914acb4a-1fdc-4931-b183-efbf4a6a5563",
"resource": {
  "resourceType": "ExplanationOfBenefit",
  "id": "914acb4a-1fdc-4931-b183-efbf4a6a5563",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2019-12-18T22:49:23.000-05:00",
    "profile": [
      "http://hl7.org/fhir/us/car/StructureDefinition/car/ExplanationOfBenefit-
pharmacy"
    ],
    "tag": [
      {
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "8b52fd79-0a8d-47ea-b880-9f497e33e4ab\t\t1"
      }
    ]
  },
  "text": {
    "status": "generated",
    "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t<p>\n\t\t\t<b>Generated
Narrative with Details</b>\n\t\t</p>\n\t\t</div>"
  },
  "identifier": [
    {
      "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
      "value": "4E93-BE91-EAC1977941A8"
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "914acb4a-1fdc-4931-b183-efbf4a6a5563"
    }
  ],
  "status": "active",
  "type": {
    "coding": [
      {
        "system": "http://hl7.org/fhir/us/car/CodeSystem/car/ExplanationOfBenefit-
pharmacy",
        "code": "pharmacy",
        "display": "pharmacy"
      }
    ]
  },
  "use": "claim",
  "patient": {
    "reference": "Patient/Patient1"
  },
  "created": "2015-02-07T13:28:17-05:00",
  "enterer": {
    "reference": "PractitionerRole/PractitionerRole1"
  },
  "insurer": {
    "reference": "Organization/Org45"
  },
  "provider": {
    "reference": "Organization/Org45"
  },
  "outcome": "complete",
  "supportingInfo": [
    {
      "sequence": 3,
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/car/CodeSystem/car/ExplanationOfBenefit-
claiminformationcategory",
            "code": "brandgenericcode"
          }
        ]
      }
    }
  ]
}

```

```

    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  }
}

```

### [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX

```
[base]/ExplanationOfBenefit?patient=[reference]&status=XXXX
```

```
GET /ExplanationOfBenefit?patient=Patient1&status=active&_profile=http://hl7.org/fhir/us/carín/
StructureDefinition/carín-bb-explanationofbenefit-pharmacy
```

```

{
  "resourceType": "Bundle",
  "id": "377fdf2c-54fa-4a8e-89d3-ae9ae69c7c6b",
  "meta": {
    "lastUpdated": "2021-01-27T21:39:54.633+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%
2Fcarín%2FStructureDefinition%2Fcarín-bb-explanationofbenefit-pharmacy&created=ge2015-02-
07&patient=Patient1&status=active"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/85a26580-4dc7-49ae-8ca9-03004940853a",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "85a26580-4dc7-49ae-8ca9-03004940853a",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [

```



```

        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      ],
      "total": [
        {
          "category": {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
                "code": "submittedamount"
              }
            ],
            "amount": {
              "value": 9000
            }
          }
        }
      ],
      "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/914acb4a-1fdc-4931-b183-efbf4a6a5563",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "914acb4a-1fdc-4931-b183-efbf4a6a5563",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-explanationofbenefit-
pharmacy"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "8b52fd79-0a8d-47ea-b880-9f497e33e4ab\t\t\t1"
            }
          ],
          "text": {
            "status": "generated",
            "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
          },
          "identifier": [
            {
              "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
              "value": "4E93-BE91-EAC1977941A8"
            },
            {
              "use": "official",
              "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
              "value": "914acb4a-1fdc-4931-b183-efbf4a6a5563"
            }
          ],
          "status": "active",
          "type": {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-claim-type",
                "code": "pharmacy",
                "display": "pharmacy"
              }
            ],
            "use": "claim",

```

```

    "patient": {
      "reference": "Patient/Patient1"
    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-
claiminformationcategory",
              "code": "brandgenericcode"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  }
}

```

[\[base\]/ExplanationOfBenefit?patient=\[reference\]&status=XXXX&created={gt|lt|ge|le}\[date\]&&date={gt|lt|ge|le}\[date\]](#)

```
[base]/ExplanationOfBenefit?patient=[reference]&status=XXXX&created={gt|lt|ge|le}[date]&&date={gt|lt|ge|le}[date]
```

```
GET /ExplanationOfBenefit?patient=Patient1&status=active&created=ge2015-02-07&_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-explanationofbenefit-pharmacy
```

```
{
```



```

"resourceType": "Bundle",
"id": "377fdf2c-54fa-4a8e-89d3-ae9ae69c7c6b",
"meta": {
  "lastUpdated": "2021-01-27T21:39:54.633+00:00"
},
"type": "searchset",
"total": 2,
"link": [
  {
    "relation": "self",
    "url": "https://<datahub_server>/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%2FStructureDefinition%2Fcarin-bb-explanationofbenefit-pharmacy&created=ge2015-02-07&patient=Patient1&status=active"
  }
],
"entry": [
  {
    "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/85a26580-4dc7-49ae-8ca9-03004940853a",
    "resource": {
      "resourceType": "ExplanationOfBenefit",
      "id": "85a26580-4dc7-49ae-8ca9-03004940853a",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2019-12-18T22:49:23.000-05:00",
        "profile": [
          "http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-explanationofbenefit-pharmacy"
        ]
      },
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "bb6eb695-50d9-492a-9372-971e0a263a06\t\t\t1"
        }
      ],
      "text": {
        "status": "generated",
        "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
      },
      "identifier": [
        {
          "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-identifier",
          "value": "4E93-BE91-EAC1977941A8"
        },
        {
          "use": "official",
          "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
          "value": "85a26580-4dc7-49ae-8ca9-03004940853a"
        }
      ],
      "status": "active",
      "type": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carin/CodeSystem/carin-bb-claim-type",
            "code": "pharmacy",
            "display": "pharmacy"
          }
        ],
        "use": "claim",
        "patient": {
          "reference": "Patient/Patient1"
        },
        "created": "2015-02-07T13:28:17-05:00",
        "enterer": {
          "reference": "PractitionerRole/PractitionerRole1"
        }
      }
    }
  }
]

```

```

    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "placeofservice"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  },
  {
    "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/914acb4a-1fdc-4931-b183-efbf4a6a5563",
    "resource": {
      "resourceType": "ExplanationOfBenefit",
      "id": "914acb4a-1fdc-4931-b183-efbf4a6a5563",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2019-12-18T22:49:23.000-05:00",
        "profile": [
          "http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-explanationofbenefit-
pharmacy"
        ]
      },
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "8b52fd79-0a8d-47ea-b880-9f497e33e4ab\t\t\t1"
        }
      ],
      "text": {
        "status": "generated",
        "div": "<div xmlns=\<http://www.w3.org/1999/xhtml\>\n\t\t\t<p>\n\t\t\t\t<b>Generated

```

```

Narrative with Details</b>\n\t\t</p>\n\t\t</div>"
  },
  "identifier": [
    {
      "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-
identifier",
      "value": "4E93-BE91-EAC1977941A8"
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "914acb4a-1fdc-4931-b183-efbf4a6a5563"
    }
  ],
  "status": "active",
  "type": {
    "coding": [
      {
        "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-claim-type",
        "code": "pharmacy",
        "display": "pharmacy"
      }
    ]
  },
  "use": "claim",
  "patient": {
    "reference": "Patient/Patient1"
  },
  "created": "2015-02-07T13:28:17-05:00",
  "enterer": {
    "reference": "PractitionerRole/PractitionerRole1"
  },
  "insurer": {
    "reference": "Organization/Org45"
  },
  "provider": {
    "reference": "Organization/Org45"
  },
  "outcome": "complete",
  "supportingInfo": [
    {
      "sequence": 3,
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-
claiminformationcategory",
            "code": "brandgenericcode"
          }
        ]
      },
      "timingDate": "2017-04-12"
    }
  ],
  "insurance": [
    {
      "focal": true,
      "coverage": {
        "reference": "Coverage/Coverage1"
      }
    }
  ],
  "total": [
    {
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/carine/CodeSystem/carine-bb-
adjudicationcategory",
            "code": "submittedamount"
          }
        ]
      }
    }
  ]
}

```

```

    },
    "amount": {
      "value": 9000
    }
  }
]
}

```

## [base]/ExplanationOfBenefit?identifier=[system][value]

[base]/ExplanationOfBenefit?identifier=[system] | [value]

GET /ExplanationOfBenefit?identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier|914acb4a-1fdc-4931-b183-efbf4a6a5563&\_profile=http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-explanationofbenefit-pharmacy

```

{
  "resourceType": "Bundle",
  "id": "a4163441-c30c-4bde-8372-da31df802e31",
  "meta": {
    "lastUpdated": "2021-01-27T21:41:47.957+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarín%2FStructureDefinition%2Fcarín-bb-explanationofbenefit-pharmacy&identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier%7C914acb4a-1fdc-4931-b183-efbf4a6a5563"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/914acb4a-1fdc-4931-b183-efbf4a6a5563",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "914acb4a-1fdc-4931-b183-efbf4a6a5563",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-explanationofbenefit-pharmacy"
          ]
        },
        "tag": [
          {
            "system": "tranzform-apim-request-ns",
            "code": "user-request-id",
            "display": "8b52fd79-0a8d-47ea-b880-9f497e33e4ab\t\t\t1"
          }
        ],
        "text": {
          "status": "generated",
          "div": "<div xmlns=\n'http://www.w3.org/1999/xhtml'\n>\n\t\t\t<p>\n\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
        },
        "identifier": [
          {
            "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-identifier",
            "value": "4E93-BE91-EAC1977941A8"
          }
        ]
      }
    }
  ]
}

```

```

    },
    {
      "use": "official",
      "system": "com.cognizant.transform.fhir.identifiers.logical-identifier",
      "value": "914acb4a-1fdc-4931-b183-efbf4a6a5563"
    }
  ],
  "status": "active",
  "type": {
    "coding": [
      {
        "system": "http://hl7.org/fhir/us/car/CodeSystem/car-in-bb-claim-type",
        "code": "pharmacy",
        "display": "pharmacy"
      }
    ]
  },
  "use": "claim",
  "patient": {
    "reference": "Patient/Patient1"
  },
  "created": "2015-02-07T13:28:17-05:00",
  "enterer": {
    "reference": "PractitionerRole/PractitionerRole1"
  },
  "insurer": {
    "reference": "Organization/Org45"
  },
  "provider": {
    "reference": "Organization/Org45"
  },
  "outcome": "complete",
  "supportingInfo": [
    {
      "sequence": 3,
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/car/CodeSystem/car-in-bb-
claiminformationcategory",
            "code": "brandgenericcode"
          }
        ]
      },
      "timingDate": "2017-04-12"
    }
  ],
  "insurance": [
    {
      "focal": true,
      "coverage": {
        "reference": "Coverage/Coverage1"
      }
    }
  ],
  "total": [
    {
      "category": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/car/CodeSystem/car-in-bb-
adjudicationcategory",
            "code": "submittedamount"
          }
        ]
      },
      "amount": {
        "value": 9000
      }
    }
  ]
]

```

```

    }
  ]
}

```

## [base]/ExplanationOfBenefit/[id]

```
[base]/ExplanationOfBenefit/[id]
```

```
GET /ExplanationOfBenefit/914acb4a-1fdc-4931-b183-efbf4a6a5563
```

```

{
  "resourceType": "Bundle",
  "id": "a4163441-c30c-4bde-8372-da31df802e31",
  "meta": {
    "lastUpdated": "2021-01-27T21:41:47.957+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/ExplanationOfBenefit?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%2FStructureDefinition%2Fcarin-bb-explanationofbenefit-pharmacy&identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier%7C914acb4a-1fdc-4931-b183-efbf4a6a5563"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/ExplanationOfBenefit/914acb4a-1fdc-4931-b183-efbf4a6a5563",
      "resource": {
        "resourceType": "ExplanationOfBenefit",
        "id": "914acb4a-1fdc-4931-b183-efbf4a6a5563",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-explanationofbenefit-pharmacy"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "8b52fd79-0a8d-47ea-b880-9f497e33e4ab\t\t\t1"
            }
          ],
          "text": {
            "status": "generated",
            "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t\t</p>\n\t\t\t\t\t</div>"
          },
          "identifier": [
            {
              "system": "http://www.bcbs.com/fhir/ns/NamingSystem/explanationOfBenefit-identifier",
              "value": "4E93-BE91-EAC1977941A8"
            },
            {
              "use": "official",
              "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
              "value": "914acb4a-1fdc-4931-b183-efbf4a6a5563"
            }
          ],
          "status": "active",
          "type": {
            "coding": [

```

```

        {
          "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-claim-type",
          "code": "pharmacy",
          "display": "pharmacy"
        }
      ],
    },
    "use": "claim",
    "patient": {
      "reference": "Patient/Patient1"
    },
    "created": "2015-02-07T13:28:17-05:00",
    "enterer": {
      "reference": "PractitionerRole/PractitionerRole1"
    },
    "insurer": {
      "reference": "Organization/Org45"
    },
    "provider": {
      "reference": "Organization/Org45"
    },
    "outcome": "complete",
    "supportingInfo": [
      {
        "sequence": 3,
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
claiminformationcategory",
              "code": "brandgenericcode"
            }
          ]
        },
        "timingDate": "2017-04-12"
      }
    ],
    "insurance": [
      {
        "focal": true,
        "coverage": {
          "reference": "Coverage/Coverage1"
        }
      }
    ],
    "total": [
      {
        "category": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/carín/CodeSystem/carín-bb-
adjudicationcategory",
              "code": "submittedamount"
            }
          ]
        },
        "amount": {
          "value": 9000
        }
      }
    ]
  }
}

```

---

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# ExplanationOfBenefit - Professional NonClinician

## Use Case

A member downloads a mobile application and authorizes it to access their EOB data for their claims that were submitted by a provider, supplier, or other non-institutional provider for either inpatient or outpatient services. When the member loads the EOB screen in the mobile application UI, the application requests filtering criteria to limit the number of EOB's returned. The member can filter by Status, Date, and Claim ID to refine their search. The UI calls the external endpoint for the EOB. That call retrieves the EOB data and returns it in the industry-standard format . The EOB data is then translated by the mobile application for display to the member.

## Supported GET Requests

- GET [base]/ExplanationOfBenefit?patient=[reference]
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX
- GET [base]/ExplanationOfBenefit?patient=[reference]&status=XXXX&created={gt|lt|ge|le}[date]&date={gt|lt|ge|le}[date]
- GET [base]/ExplanationOfBenefit?identifier=[system]][value]
- GET [base]/ExplanationOfBenefit/[id]

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN-BB- ExplanationOfBenefit- Professional-NonClinician](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.

422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

Examples will be added when data is available.

---

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# Goal

## Use Case

A member has diabetes and their provider has given them a goal of reducing their A1C blood sugar levels. The member accesses a mobile application to see how they are proceeding towards their goal. The application UI calls an external endpoint which returns the goal information in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Goal?patient=[reference]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Goal Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

## US Core sample request and response

```
[base] / Device ? patient = [reference]

GET https://<datahub_server>/Goal?patient=35

{
  "resourceType": "Bundle",
  "id": "7cde4c4d-8f64-4ce4-8ae3-366593b62a5c",
  "meta": {
    "lastUpdated": "2021-01-25T00:48:00.398+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Goal?patient=35"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Goal/61",
    "resource": {
      "resourceType": "Goal",
      "id": "61",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2021-01-06T10:04:47.297+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-goal"]
      },
      "identifier": [{
        "use": "official",
        "type": {
          "coding": [{
            "system": "system",
            "code": "code",
            "display": "display"
          }
        ],
        "text": "textString"
      }
    ],
    "period": {
      "start": "2020-06-26",
      "end": "2021-07-19"
    },
    "assigner": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }
  }
], {
  "use": "official",
  "type": {
    "coding": [{
      "system": "system",
      "code": "code",
      "display": "display"
    }
  ],
  "text": "textString"
}, {
  "period": {
    "start": "2020-12-07",
    "end": "2021-02-05"
  }
}
```

```

    },
    "assigner": {
      "reference": "Reference/Id",
      "display": "Reference/Id"
    }
  }, {
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "61"
  }
],
"lifecycleStatus": "active",
"achievementStatus": {
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
},
"category": [{
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
}, {
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
}
],
"priority": {
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
},
"description": {
  "coding": [{
    "system": "system",
    "code": "code",
    "display": "display"
  }
],
  "text": "textString"
},
"subject": {
  "reference": "Patient/35"
},
"startDate": "2021-01-06",
"target": [{
  "measure": {
    "coding": [{
      "system": "system",
      "code": "code",
      "display": "display"
    }
],
    "text": "textString"
  }
},
},

```

```
        "detailQuantity": {
            "value": 20.66,
            "unit": "Quantity Unit"
        },
        "dueDate": "2021-01-06"
    },
    ],
    "statusDate": "2021-01-06",
    "statusReason": "Goal Status Reason",
    "expressedBy": {
        "reference": "Reference/Id",
        "display": "Reference/Id"
    },
    "addresses": [{
        "reference": "Reference/Id",
        "display": "Reference/Id"
    }, {
        "reference": "Reference/Id",
        "display": "Reference/Id"
    }
    ],
    "note": [{
        "authorReference": {
            "reference": "Reference/Id",
            "display": "Reference/Id"
        },
        "time": "2000-10-23T00:00:00+00:00",
        "text": "AnnotationText"
    }
    ],
    "outcomeCode": [{
        "coding": [{
            "system": "system",
            "code": "code",
            "display": "display"
        }
        ],
        "text": "textString"
    }, {
        "coding": [{
            "system": "system",
            "code": "code",
            "display": "display"
        }
        ],
        "text": "textString"
    }
    ],
    "outcomeReference": [{
        "reference": "Reference/Id",
        "display": "Reference/Id"
    }, {
        "reference": "Reference/Id",
        "display": "Reference/Id"
    }
    ]
}
}
```

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# HealthcareService

## Use Case

The Healthcare Service endpoint is used to retrieve a list of the services offered by an organization or practitioner at a given location. Users can retrieve all services offered by a provider for which a request was made. They can limit the result of the search by name, specialty, and other parameters.

## Supported Query Parameters

**Availability:** 5.90.001.000

These query parameters can be sent in any combination.

### Query Parameters

Query Parameter	Type	Description
<a href="#">available-days</a>	token <sup>1</sup>	Days available
<a href="#">available-end-time</a>	token	Available end time
<a href="#">available-start-time</a>	token	Available start time
<a href="#">characteristic</a>	token	Select HealthcareServices with the specified characteristic
<a href="#">coverage-area</a>	reference	Select services available in a region described by the specified location
<a href="#">eligibility</a>	token	Select services with the specified eligibility requirements
<a href="#">endpoint</a>	reference	Select HealthcareServices with the specified endpoint
<a href="#">identifier-assigner</a>	reference	Select HealthcareServices with an identifier issued by the specified organization
<a href="#">identifier</a>	token	Select HealthcareServices with the specified identifier
<a href="#">location</a>	reference	Select HealthcareServices available at the specified location
<a href="#">name</a>	string	Select HealthcareServices with the specified name
<a href="#">new-patient-network</a>	reference	Select HealthcareServices that are part of the specified network and are/are not accepting new patients



<a href="#">new-patient</a>	token	Select HealthcareServices that are/are not accepting new patients
<a href="#">organization</a>	reference	Select HealthcareServices provided by the specified organization
<a href="#">service-category</a>	token	Select HealthcareServices providing the specified category of services
<a href="#">service-type</a>	token	Select HealthcareServices of the specified type
<a href="#">specialty</a>	token	Select services associated with the specified specialty
<a href="#">via-intermediary</a>	reference	Select HealthcareServices with contact information available through the specified intermediary

1. A token refers to either [system][value] or [value]. Refer to <https://www.hl7.org/fhir/search.html#token> where the code is the Identifier.value.

## Sample GET Requests

- GET [base]/HealthcareService?location=[reference]
- GET [base]/HealthcareService?location=[reference]&acceptingPatients=[boolean]
- GET [base]/HealthcareService?name=[name]
- GET [base]/HealthcareService?identifier=[system][value]
- GET [base]/HealthcareService?specialty=[system][value]&acceptingPatients=[boolean]

## Response Parameters

The response parameters for the GET method are as follows:

- [Provider Directory - Pdex - Plan Net - Healthcare Service](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.

404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/HealthcareService?location=[reference]

```
[base]/HealthcareService?location=[reference]

GET /HealthcareService?location=HospLoc1

{
  "resourceType": "Bundle",
  "id": "cf6af02e-3c4f-45e2-8a59-6aa9df4e37b5",
  "meta": {
    "lastUpdated": "2021-01-26T21:59:02.442+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/HealthcareService?location=HospLoc1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/HealthcareService/BurrClinicServices",
      "resource": {
        "resourceType": "HealthcareService",
        "id": "BurrClinicServices",
        "meta": {
          "lastUpdated": "2020-07-07T13:26:22.0314215+00:00",
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/HealthcareService"
          ]
        },
        "language": "en-US",
        "text": {
          "status": "extensions",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b></p><h3>Ids</h3><table class='grid'><tr><td>-</td></tr><tr><td>*</td></tr></table><h3>Meta</h3><table class='grid'><tr><td>-</td></tr><tr><td>*</td></tr></table><p><b>language</b>: en-US</p><blockquote><p><b>Delivery Method</b></p><h3>Urls</h3><table class='grid'><tr><td>-</td></tr><tr><td>*</td></tr></table><p><b>value</b>: <span title='Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem/DeliveryMethodCS physical}'>Physical</span></p></blockquote><p><b>active</b>: true</p><p><b>providedBy</b>: <a href='\"Organization-BurrClinic.html\">Generated Summary: language: en-US; id: NPI999; active; <span title='Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem/OrgTypeCS fac}'></span></a></p><p><b>category</b>: <span title='Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem/HealthcareServiceCategoryCS outpatient}'>Clinic or Outpatient Facility</span></p><p><b>specialty</b>: <span title='Codes: {http://nucc.org/provider-taxonomy 207Q00000X}'>Family Medicine</span></p><p><b>location</b>: <a href='\"Location-HospLoc1.html\">Generated Summary: language: en-US; status: active; name: Hartford Hospital Location 1; <span title='Codes: {http://terminology.hl7.org/CodeSystem/v3-RoleCode HOSP}'></span></a></p></div>"
        },
        "extension": [
          {
            "url": "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/delivery-method",
            "extension": [

```

```

        "url": "type",
        "valueCodeableConcept": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net
/CodeSystem/DeliveryMethodCS",
              "code": "physical"
            }
          ]
        }
      ],
    },
    {
      "url": "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition
/newpatients",
      "extension": [
        {
          "url": "acceptingPatients",
          "valueCodeableConcept": {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net
/CodeSystem/AcceptingPatientsCS",
                "code": "newpt"
              }
            ]
          }
        }
      ],
      "active": true,
      "providedBy": {
        "reference": "Organization/BurrClinic"
      },
      "category": [
        {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/HealthcareServiceCategoryCS",
              "code": "outpat"
            }
          ]
        }
      ],
      "specialty": [
        {
          "coding": [
            {
              "system": "http://nucc.org/provider-taxonomy",
              "code": "207Q00000X",
              "display": "Family Medicine"
            }
          ]
        }
      ],
      "location": [
        {
          "reference": "Location/HospLoc1"
        }
      ]
    }
  ],
  {
    "fullUrl": "https://<datahub_server>/HealthcareService/HamiltonClinicServices",
    "resource": {
      "resourceType": "HealthcareService",
      "id": "HamiltonClinicServices",
      "meta": {

```

```

      "lastUpdated": "2020-07-07T13:26:22.0314215+00:00",
      "profile": [
        "http://hl7.org/fhir/StructureDefinition/HealthcareService"
      ]
    },
    "language": "en-US",
    "text": {
      "status": "extensions",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b><
/p><h3>Ids</h3><table class=\"grid\"><tr><td>-</td></tr><tr><td>*</td></tr></table><h3>Meta</h3><table
class=\"grid\"><tr><td>-</td></tr><tr><td>*</td></tr></table><p><b>language</b>: en-US<
/p><blockquote><p><b>Delivery Method</b></p><h3>Urls</h3><table class=\"grid\"><tr><td>-</td></tr><tr><td>*<
/td></tr></table><p><b>value</b>: <span title=\"Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net
/CodeSystem/DeliveryMethodCS physical}\">Physical</span></p></blockquote><p><b>active</b>: true<
/p><p><b>providedBy</b>: <a href=\"Organization-HamiltonClinic.html\">Generated Summary: language: en-US;
id: NPI78; active; <span title=\"Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem/OrgTypeCS
fac}\">Facility</span>; name: Hamilton Clinic; ph: (111)-222-3333, https://www.hartfordgeneralhospital.com<
/a></p><p><b>category</b>: <span title=\"Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/HealthcareServiceCategoryCS output}\">Clinic or Outpatient Facility</span></p><p><b>specialty</b>: <span
title=\"Codes: {http://nucc.org/provider-taxonomy 207Q00000X}\">Family Medicine</span></p><p><b>location<
/b>: <a href=\"Location-HospLoc1.html\">Generated Summary: language: en-US; status: active; name: Hartford
Hospital Location 1; <span title=\"Codes: {http://terminology.hl7.org/CodeSystem/v3-RoleCode HOSP}\">
>Hospital</span>; ph: (111)-222-3333, https://www.hgh.com</a></p></div>"
    },
    "extension": [
      {
        "url": "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/delivery-
method",
        "extension": [
          {
            "url": "type",
            "valueCodeableConcept": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net
/CodeSystem/DeliveryMethodCS",
                  "code": "physical"
                }
              ]
            }
          }
        ]
      },
      {
        "url": "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition
/newpatients",
        "extension": [
          {
            "url": "acceptingPatients",
            "valueCodeableConcept": {
              "coding": [
                {
                  "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net
/CodeSystem/AcceptingPatientsCS",
                  "code": "newpt"
                }
              ]
            }
          }
        ]
      }
    ],
    "active": true,
    "providedBy": {
      "reference": "Organization/HamiltonClinic"
    },
    "category": [
      {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem

```



```

        {
          "url" : "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
AcceptingPatients-extension",
          "valueBoolean" : true
        }
      ]
    },
    "identifier" : [
      {
        "use" : "official",
        "type" : {
          "text" : "NPI"
        },
        "system" : "https://npiregistry.cms.hhs.gov",
        "value" : "HL001"
      },
      {
        "system" : "http://terminology.hl7.org/CodeSystem/common-tags/audit-identifier"
      }
    ],
    "active" : true,
    "providedBy" : {
      "reference" : "Organization/ACME234505",
      "type" : "Organization"
    },
    "category" : [
      {
        "text" : "TSS000008765 : PHYSICIAN GROUP"
      }
    ],
    "type" : [
      {
        "text" : "208D00000X : General Practice"
      }
    ],
    "specialty" : [
      {
        "coding" : [
          {
            "system" : "http://nucc.org/provider-taxonomy",
            "code" : "208D00000X",
            "display" : "General Practice"
          }
        ],
        "text" : "General Practice"
      }
    ],
    "location" : [
      {
        "reference" : "Location/1"
      }
    ],
    "name" : "MULTI-SPECIALTY GROUP"
  }
]
}

```

### [base]/HealthcareService?name=[name]

```
[base]/HealthcareService?name=[name]
```

```
GET /HealthcareService?name=Pharmacy%20by%20PharmChain
```

```

{
  "resourceType": "Bundle",
  "id": "1ef28391-4f91-4ceb-9f6a-2f969a6eafda",

```

```

"meta": {
  "lastUpdated": "2021-01-26T22:02:54.048+00:00"
},
"type": "searchset",
"total": 1,
"link": [
  {
    "relation": "self",
    "url": "https://<datahub_server>/HealthcareService?name=Pharmacy%20by%20PharmChain"
  }
],
"entry": [
  {
    "fullUrl": "https://<datahub_server>/HealthcareService/9978aa61-9ee7-4744-a29c-38658ae24bdb",
    "resource": {
      "resourceType": "HealthcareService",
      "id": "9978aa61-9ee7-4744-a29c-38658ae24bdb",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-07-07T13:26:22.0314215+00:00",
        "profile": [
          "http://hl7.org/fhir/StructureDefinition/HealthcareService"
        ],
        "tag": [
          {
            "system": "tranzform-apim-request-ns",
            "code": "user-request-id",
            "display": "cb7b4da7-ece9-486b-b64d-70dcd220355b\t\t\t1"
          }
        ]
      },
      "language": "en-US",
      "text": {
        "status": "extensions",
        "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\t\t<b>Generated  
Narrative with Details</b>\n\t\t\t\t\t</p>\n\t\t\t\t\t</div>"
      },
      "extension": [
        {
          "url": "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/delivery-  
method",
          "extension": [
            {
              "url": "type",
              "valueCodeableConcept": {
                "coding": [
                  {
                    "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net  
/CodeSystem/DeliveryMethodCS",
                    "code": "virtual"
                  }
                ]
              }
            }
          ]
        }
      ],
      "identifier": [
        {
          "use": "official",
          "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
          "value": "9978aa61-9ee7-4744-a29c-38658ae24bdb"
        }
      ],
      "active": true,
      "category": [
        {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem  
/HealthcareServiceCategoryCS",

```

```

        "code": "outpat"
      }
    ],
    "name": "Pharmacy by PharmChain"
  }
}

```

### [base]/HealthcareService?identifier=[system][value]

```
[base]/HealthcareService?identifier=[system] | [value]
```

```
GET /HealthcareService?identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier|9978aa61-9ee7-4744-a29c-38658ae24bdb
```

```

{
  "resourceType": "Bundle",
  "id": "1ef28391-4f91-4ceb-9f6a-2f969a6eafda",
  "meta": {
    "lastUpdated": "2021-01-26T22:02:54.048+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/HealthcareService?name=Pharmacy%20by%20PharmChain"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/HealthcareService/9978aa61-9ee7-4744-a29c-38658ae24bdb",
      "resource": {
        "resourceType": "HealthcareService",
        "id": "9978aa61-9ee7-4744-a29c-38658ae24bdb",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-07-07T13:26:22.0314215+00:00",
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/HealthcareService"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "cb7b4da7-ece9-486b-b64d-70dcd220355b\t\t\t1"
            }
          ]
        },
        "language": "en-US",
        "text": {
          "status": "extensions",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
        },
        "extension": [
          {
            "url": "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/delivery-method",
            "extension": [
              {
                "url": "type",
                "valueCodeableConcept": {
                  "coding": [

```



```

        "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net
/CodeSystem/DeliveryMethodCS",
        "code": "virtual"
    }
  ],
  "identifier": [
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "9978aa61-9ee7-4744-a29c-38658ae24bdb"
    }
  ],
  "active": true,
  "category": [
    {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/HealthcareServiceCategoryCS",
          "code": "outpat"
        }
      ]
    }
  ],
  "name": "Pharmacy by PharmChain"
}

```

### [base]/HealthcareService?specialty=[system]][value]&acceptingPatients=[boolean]

```

[base]/HealthcareService?specialty=[system] | [value] & acceptingPatients=[boolean]
GET /HealthcareService?acceptingPatients=true&specialty=http://nucc.org/provider-taxonomy|208D00000X
{
  "resourceType": "Bundle",
  "id": "048a28e9-ab91-4c33-bb2f-b84edebf5bb8",
  "meta": {
    "lastUpdated": "2021-08-04T17:27:14.305+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir/HealthcareService?
acceptingPatients=true&specialty=http%3A%2F%2Fnucc.org%2Fprovider-taxonomy%7C208D00000X"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://devtzinterop.healthtranzformdev.com/qa/datahub/fhir/HealthcareService/HL0001",
      "resource": {
        "resourceType": "HealthcareService",
        "id": "HL0001",
        "meta": {
          "versionId": "2",
          "lastUpdated": "2021-05-31T02:41:03.4308578-04:00",
          "source": "QNXT",
          "profile": [
            "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-

```

```

HealthcareService"
  ]
  },
  "extension" : [
    {
      "url" : "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
NewPatients-extension",
      "extension" : [
        {
          "url" : "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
AcceptingPatients-extension",
          "valueBoolean" : true
        }
      ]
    }
  ],
  "identifier" : [
    {
      "use" : "official",
      "type" : {
        "text" : "NPI"
      },
      "system" : "https://npiregistry.cms.hhs.gov",
      "value" : "HL001"
    },
    {
      "system" : "http://terminology.hl7.org/CodeSystem/common-tags/audit-identifier"
    }
  ],
  "active" : true,
  "providedBy" : {
    "reference" : "Organization/ACME234505",
    "type" : "Organization"
  },
  "category" : [
    {
      "text" : "TSS000008765 : PHYSICIAN GROUP"
    }
  ],
  "type" : [
    {
      "text" : "208D00000X : General Practice"
    }
  ],
  "specialty" : [
    {
      "coding" : [
        {
          "system" : "http://nucc.org/provider-taxonomy",
          "code" : "208D00000X",
          "display" : "General Practice"
        }
      ],
      "text" : "General Practice"
    }
  ],
  "location" : [
    {
      "reference" : "Location/1"
    }
  ],
  "name" : "MULTI-SPECIALTY GROUP"
}
]
}
}

```

---

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# Immunization

## Use Case

A parent has been asked by a practitioner to provide a list of immunizations that their child has received. The parent authorizes a mobile application to retrieve their child's immunization information. The application UI calls an external endpoint which returns the immunization information in an industry-standard format. The application then translates the data and displays it to the parent.

## Supported GET Requests

- GET [base]/Immunization?patient=[reference]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Immunization Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

## US Core sample request and response

```

** ** ** ** ** ** ** ** ** ** IMMUNIZATION ** ** ** ** ** ** ** ** ** ** *
[base]/Immunization?patient=[reference]

GET    /Immunization?patient=34343900

{
  "resourceType": "Bundle",
  "id": "1b6ae232-e46f-4899-a01e-99c14fa75b9f",
  "meta": {
    "lastUpdated": "2021-01-28T01:53:41.430+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Immunization?patient=34343900"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Immunization/9585156575",
      "resource": {
        "resourceType": "Immunization",
        "id": "9585156575",
        "meta": {
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-immunization"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: historical</p><p><b>identifier</b>: urn:oid:1.3.6.1.4.1.21367.2005.3.7.1234<
/p><p><b>status</b>: completed</p><p><b>vaccineCode</b>: Influenza <span>(Details : {urn:oid:
1.2.36.1.2001.1005.17 code 'GNFLU' = 'Influenza')</span></p><p><b>patient</b>: <a>Patient/example</a><
/p><p><b>occurrence</b>: January 2012</p><p><b>primarySource</b>: false</p><p><b>reportOrigin</b>: Written
Record <span>(Details : {http://terminology.hl7.org/CodeSystem/immunization-origin code 'record' = 'Written
Record')</span></p><p><b>location</b>: <a>Location/1</a></p><p><b>note</b>: Notes on administration of a
historical vaccine</p></div>"
        },
        "identifier": [
          {
            "system": "urn:ietf:rfc:3986",
            "value": "urn:oid:1.3.6.1.4.1.21367.2005.3.7.1234"
          }
        ],
        "status": "completed",
        "vaccineCode": {
          "coding": [
            {
              "system": "urn:oid:1.2.36.1.2001.1005.17",
              "code": "GNFLU"
            }
          ],
          "text": "Influenza"
        },
        "patient": {
          "reference": "Patient/34343900"
        }
      }
    }
  ]
}

```

```
    },
    "occurrenceString": "January 2012",
    "primarySource": false,
    "reportOrigin": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/immunization-origin",
          "code": "record"
        }
      ],
      "text": "Written Record"
    },
    "location": {
      "reference": "Location/1"
    },
    "note": [
      {
        "text": "Notes on administration of a historical vaccine"
      }
    ]
  }
}
```

---

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# Implantable Device

## Use Case

A member has received a knee replacement and wants to see the type of device that was used. The member accesses a mobile application which calls an external endpoint. The endpoint returns the knee replacement device details in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Device?patient=[reference]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Implantable Device Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

## US Core sample request and response

```
[base] / Device ? patient = [reference]

GET https://<datahub_server>/Device?patient=7058037

{
  "resourceType": "Bundle",
  "id": "695d3410-7e39-40cc-9f16-136842d7717f",
  "meta": {
    "lastUpdated": "2021-01-25T00:46:17.694+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Device?patient=7058037"
    },
    {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=2b4e5d6b-af61-5a2d-86cf-014416c8a910&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Device/ac28196b-1697-4427-a221-4f855fe447d7",
      "resource": {
        "resourceType": "Device",
        "id": "ac28196b-1697-4427-a221-4f855fe447d7",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-14T07:18:06.035+00:00",
          "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-implantable-device"],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "b8fb6546-a7b3-4a8c-a9a0-aaa2f88a64e0\t\t\t1"
            }
          ]
        },
        "identifier": [
          {
            "system": "http://snomed.info/sct",
            "value": "987DV"
          },
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "ac28196b-1697-4427-a221-4f855fe447d7"
          }
        ],
        "udiCarrier": [
          {
            "deviceIdentifier": "987DV",
            "carrierHRF": "(01)98DV(16)IM12(19)M320(20)AC221"
          }
        ],
        "distinctIdentifier": "IM12",
        "manufactureDate": "2015-10-15",
        "expirationDate": "2022-01-01",
        "lotNumber": "M320",
        "serialNumber": "AC221",
        "type": {
          "coding": [
            {
              "system": "http://snomed.info/sct",

```





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# InsurancePlan

## Use Case

For a consumer (member) of the health plan, the **InsurancePlan** API offers a way to view the coverage benefits that are offered under a particular network type. **InsurancePlan** offers the consumers an ability to determine the various plans offered within a product and the cost sharing structure for a specific plan.

## Supported Query Parameters

**Availability:** 5.90.001.000

These query parameters can be sent in any combination.

### Query Parameters

Query Parameter	Type	Description
<a href="#">administered-by</a>	reference	Select products that are administered by the specified organization
<a href="#">coverage-area</a>	reference	Select products that are offered in the specified location
<a href="#">coverage-benefit-type</a>	token <sup>1</sup>	Select health insurance products offering covered benefits of the specified type
<a href="#">coverage-limit-value</a>	quantity	Select health insurance products with covered benefits limited in the specified manner
<a href="#">coverage-network</a>	reference	Select products offering covered benefits through the specified health insurance provider network
<a href="#">coverage-type</a>	token	Select products offering the specified type of coverage
<a href="#">endpoint</a>	reference	Select health insurance products/plans with the specified endpoint
<a href="#">general-cost-groupsize</a>	token	Select plans with costs for the specified group size
<a href="#">general-cost-type</a>	token	Select plans with the specified type of cost
<a href="#">general-cost-value</a>	quantity	Select plans which include the specified cost
<a href="#">identifier</a>	token	Select products with the specified identifier
<a href="#">name</a>	string	Select products with the specified name
<a href="#">network</a>	reference	Select products associated with the specified health insurance provider network
<a href="#">owned-by</a>	reference	Select products that are owned by the specified organization

	ce	
<a href="#">plan-coverage-area</a>	reference	Select plans that are available in the specified location
<a href="#">plan-identifier</a>	token	Select plans with the specified identifier
<a href="#">plan-network</a>	reference	Select plans associated with the specified health insurance provider network
<a href="#">plan-type</a>	token	Select plans of the specified type
<a href="#">specific-cost-benefit-type</a>	token	Select plans which include costs for the specified type of benefit
<a href="#">specific-cost-category</a>	token	Select plans which include costs for the specified category of coverage
<a href="#">specific-cost-cost-type</a>	token	Select plans which include the specified type of cost
<a href="#">specific-cost-value</a>	quantity	Select plans which include the specified cost
<a href="#">status</a>	token	Select health insurance products/plans with the specified status
<a href="#">type</a>	token	Select insurance plans of the specified type
<a href="#">telecom-available-days</a>	token	Days available
<a href="#">telecom-available-end-time</a>	token	End time
<a href="#">telecom-available-start-time</a>	token	Start time

1. A token refers to either [system][value] or [value]. Refer to <https://www.hl7.org/fhir/search.html#token> where the code is the Identifier.value.

## Sample GET Requests

- GET [base]/InsurancePlan?name=[name]
- GET [base]/InsurancePlan?identifier=[system][value]
- GET [base]/InsurancePlan?coverage-area=[Reference]

## Response Parameters

The response parameters for the GET method are as follows:

- [Provider Directory - PDEX- Plan Net - Insurance Plan](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

### [base]/InsurancePlan?name=[name]

```
[base]/InsurancePlan?name=[name]

GET /InsurancePlan?name=Acme%20of%20CT%20QHP%20Bronze

{
  "resourceType": "Bundle",
  "id": "98fd27b2-8934-4f4d-8742-671711efb4fd",
  "meta": {
    "lastUpdated": "2021-02-01T21:23:11.771+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/InsurancePlan?name=Acme%20of%20CT%20QHP%20Bronze"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/InsurancePlan/b18a5b1e-ad29-5565-9d2a-062113116223",
      "resource": {
        "resourceType": "InsurancePlan",
        "id": "b18a5b1e-ad29-5565-9d2a-062113116223",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-07-07T13:26:22.031+00:00",
          "profile": [
```

```

      "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
InsurancePlan"
    ],
    "tag": [
      {
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "a1672ca0-428a-4b18-a14a-d0aec9b333eb\t\t\t1"
      }
    ],
    "language": "en-US",
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
    },
    "identifier": [
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "b18a5b1e-ad29-5565-9d2a-062113116223"
      }
    ],
    "status": "active",
    "type": [
      {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/InsuranceProductTypeCS",
            "code": "qhp",
            "display": "Qualified Health Plan"
          }
        ]
      }
    ],
    "name": "Acme of CT QHP Bronze",
    "ownedBy": {
      "reference": "Organization/PharmChain"
    },
    "administeredBy": {
      "reference": "Organization/PharmChain"
    },
    "plan": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/InsurancePlanTypeCS",
              "code": "bronze",
              "display": "Bronze-QHP"
            }
          ]
        }
      }
    ]
  }
}

```

[\[base\]/InsurancePlan?identifier=\[system\]\]\[value\]](#)

[base]/InsurancePlan?identifier=[system] | [value]

GET /InsurancePlan?identifier=com.cognizant.tranzform.fhir.identifiers.logical-identifier|b18a5b1e-ad29-

```

5565-9d2a-062113116223

{
  "resourceType": "Bundle",
  "id": "a23de087-0b16-435e-87e0-2755b4bf8914",
  "meta": {
    "lastUpdated": "2021-02-01T21:29:33.543+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/InsurancePlan?identifier=com.cognizant.tranzform.fhir.
identifiers.logical-identifier%7Cb18a5b1e-ad29-5565-9d2a-062113116223"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/InsurancePlan/b18a5b1e-ad29-5565-9d2a-062113116223",
      "resource": {
        "resourceType": "InsurancePlan",
        "id": "b18a5b1e-ad29-5565-9d2a-062113116223",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-07-07T13:26:22.031+00:00",
          "profile": [
            "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
InsurancePlan"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "a1672ca0-428a-4b18-a14a-d0aec9b333eb\t\t\t1"
            }
          ]
        },
        "language": "en-US",
        "text": {
          "status": "generated",
          "div": "<div xmlns=\<http://www.w3.org/1999/xhtml\>\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
        },
        "identifier": [
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "b18a5b1e-ad29-5565-9d2a-062113116223"
          }
        ],
        "status": "active",
        "type": [
          {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/InsuranceProductTypeCS",
                "code": "qhp",
                "display": "Qualified Health Plan"
              }
            ]
          }
        ],
        "name": "Acme of CT QHP Bronze",
        "ownedBy": {
          "reference": "Organization/PharmChain"
        },
        "administeredBy": {
          "reference": "Organization/PharmChain"
        }
      }
    }
  ]
}

```

```

    },
    "plan": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/InsurancePlanTypeCS",
              "code": "bronze",
              "display": "Bronze-QHP"
            }
          ]
        }
      }
    ]
  }
}

```

### [base]/InsurancePlan?coverage-area=[Reference]

```

[base]/InsurancePlan?coverage-area=[Reference]

GET /InsurancePlan?coverage-area=Location/StateOfCTLocation

{
  "resourceType": "Bundle",
  "id": "f22b9617-17ea-479f-be85-c4c7da22e3d3",
  "meta": {
    "lastUpdated": "2021-02-01T21:28:03.995+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/InsurancePlan?coverage-area=Location%2FStateOfCTLocation"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/InsurancePlan/AcmeQHPGold",
      "resource": {
        "resourceType": "InsurancePlan",
        "id": "AcmeQHPGold",
        "meta": {
          "lastUpdated": "2020-07-07T13:26:22.0314215+00:00",
          "profile": [
            "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
InsurancePlan"
          ]
        },
        "language": "en-US",
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b><
/p><h3>Ids</h3><table class='grid'><tr><td>-</td></tr><tr><td>*</td></tr></table><h3>Meta</h3><table
class='grid'><tr><td>-</td></tr><tr><td>*</td></tr></table><p><b>language</b>: en-US</p><p><b>status</b>:
active</p><p><b>type</b>: <span title='Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/InsuranceProductTypeCS qhp}'>Qualified Health Plan</span></p><p><b>name</b>: Acme of CT QHP Gold<
/p><p><b>ownedBy</b>: <a href='\"Organization-Acme.html\">Generated Summary: language: en-US; active; <span
title='\"Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem/OrgTypeCS payer}'>Payer</span>;
name: Acme of CT; ph: (111)-222-3333, https://www.acmeofct.com/<a></p><p><b>administeredBy</b>: <a href='\"
Organization-Acme.html\">Generated Summary: language: en-US; active; <span title='\"Codes: {http://hl7.org
/fhir/us/davinci-pdex-plan-net/CodeSystem/OrgTypeCS payer}'>Payer</span>; name: Acme of CT; ph: (111)-222-
3333, https://www.acmeofct.com/<a></p><p><b>coverageArea</b>: <a href='\"Location-StateOfCTLocation.html\"
>Generated Summary: language: en-US; status: active; name: State of CT Area</a></p><p><b>endpoint</b>: <a

```



```

href=\\"Endpoint-AcmeOfCTPortalEndpoint.html\\">Generated Summary: language: en-US; status: active; <span
title=\\"{http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem/EndpointConnectionTypeCS rest-non-fhir}\\"
>REST (not FHIR)</span>; name: Endpoint for Acme of CT Portal; <span title=\\"Codes: {http://hl7.org/fhir/us
/davinci-pdex-plan-net/CodeSystem/EndpointPayloadTypeCS NA}\\">Not Applicable</span>; address:
https://urlofportal.acmect.com</a></p><p><b>network</b>: </p><ul><li><a href=\\"Organization-AcmeofCTStdNet.
html\\">Generated Summary: language: en-US; active; <span title=\\"Codes: {http://hl7.org/fhir/us/davinci-
pdex-plan-net/CodeSystem/OrgTypeCS payer}\\">Payer</span>; name: ACME CT Preferred Provider Network</a><
/li><li><a href=\\"Organization-AcmeofCTPremNet.html\\">Generated Summary: language: en-US; active; <span
title=\\"Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem/OrgTypeCS payer}\\">Payer</span>;
name: ACME CT Premium Preferred Provider Network</a></li></ul><h3>Plans</h3><table class=\\"grid\\\"><tr><td>-<
/td><td><b>Type</b></td></tr><tr><td>*</td><td><span title=\\"Codes: {http://hl7.org/fhir/us/davinci-pdex-
plan-net/CodeSystem/InsurancePlanTypeCS gold}\\">Gold-QHP</span></td></tr></table></div>"
    },
    "status": "active",
    "type": [
      {
        "coding": [
          {
            "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/InsuranceProductTypeCS",
            "code": "qhp",
            "display": "Qualified Health Plan"
          }
        ]
      }
    ],
    "name": "Acme of CT QHP Gold",
    "ownedBy": {
      "reference": "Organization/Acme"
    },
    "administeredBy": {
      "reference": "Organization/Acme"
    },
    "coverageArea": [
      {
        "reference": "Location/StateOfCTLocation"
      }
    ],
    "endpoint": [
      {
        "reference": "Endpoint/AcmeOfCTPortalEndpoint"
      }
    ],
    "network": [
      {
        "reference": "Organization/AcmeofCTStdNet"
      },
      {
        "reference": "Organization/AcmeofCTPremNet"
      }
    ],
    "plan": [
      {
        "type": {
          "coding": [
            {
              "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/InsurancePlanTypeCS",
              "code": "gold",
              "display": "Gold-QHP"
            }
          ]
        }
      }
    ]
  }
}

```

---

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# Location

## Use Case

The Location endpoint is used during other HL7 FHIR APIs to retrieve location information for a provider. Additionally, it can be called as a stand-alone API. When a user loads the location screen in the mobile application UI, the UI calls in to the external endpoint for the location. That call returns the location data in the industry-standard format where it is then translated by the mobile application for display. The user now views the location information in a user friendly way.

## Supported Query Parameters

**Availability:** 5.90.001.000

These query parameters can be sent in any combination.

### Query Parameters

Query Parameter	Type	Description
<a href="#">available-days</a>	token <sup>1</sup>	Days available
<a href="#">available-end-time</a>	token	Available end time
<a href="#">available-start-time</a>	token	Available start time
<a href="#">accessibility</a>	token	Select locations that offer the specified accessibility options
<a href="#">address</a>	string	Select Locations with the specified address
<a href="#">contains</a>	special	Select locations that contain the specified co-ordinates
<a href="#">endpoint</a>	reference	Select Locations with the specified endpoint
<a href="#">identifier-assigner</a>	reference	Select Locations with an identifier issued by the specified organization
<a href="#">identifier</a>	token	Select Locations with the specified identifier
<a href="#">new-patient-network</a>	reference	Select locations that are part of the specified network and are/are not accepting new patients
<a href="#">new-patient</a>	token	Select locations that are/are not accepting new patients
<a href="#">organization</a>	reference	Select Locations managed by the specified organization
<a href="#">partof</a>	reference	Select Locations that are part of the specified location

<a href="#">status</a>	token	Select Locations with the specified status
<a href="#">type</a>	token	Select Locations of the specified type
<a href="#">via-intermediary</a>	reference	Select Locations with contact information available through the specified intermediary
<a href="#">telecom-available-days</a>	token	Days available
<a href="#">telecom-available-end-time</a>	token	end time
<a href="#">telecom-available-start-time</a>	token	Start time

1. A token refers to either [system][value] or [ value]. Refer to <https://www.hl7.org/fhir/search.html#token> where the code is the Identifier.value.

## Sample GET Requests

- GET [base]/Location?name=XXXXX
- GET [base]/Location?address=XXXXX
- GET [base]/Location?address-postalcode=XXXXX
- GET [base]/Location?identifier=[system][value]

## Changing the Data Profile of the GET Response

You can change the data profile in the response of the GET method using the query parameter, **\_profile**. There is also a header parameter; **X-Profile**. If you include both the **\_profile** query parameter and the **X-Profile** header parameter in a request, the **\_profile** query parameter takes precedence.

- **US Core:** <http://hl7.org/fhir/us/core/StructureDefinition/us-core-location>
- **Da Vinci PDEX Plan Net:** <http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Location>

The following example shows the use of the **\_profile** query parameter:

```
GET /Location?name=level%20seven&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-location
```

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core](#)
- [Da Vinci PDEX Plan Net](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

### [base]/Location?name=XXXXX

#### US Core

```
[base] / Location ? name = XXXXX

GET/Location?name=level%20seven&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-location

{
  "resourceType": "Bundle",
  "id": "6c78b792-549f-4b38-ab45-67f639c581f3",
  "meta": {
    "lastUpdated": "2021-01-23T00:51:25.715+00:00"
  },
  "type": "searchset",
  "total": 15,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Location?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%2FStructureDefinition%2Fus-core-location&name=level%20seven"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=b9f9d736-5a20-5c8f-a693-b7c783f0328e&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Location/Loc01",
    "resource": {
```

```

    "resourceType": "Location",
    "id": "Loc01",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-11-25T06:08:40.285+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-location"],
      "tag": [{
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "fd2cfb9f-5b51-4e92-b8ca-cdd096fedf6c\t\t\t1"
      }
    ]
  },
  "identifier": [{
    "system": "http://www.acme.org/location",
    "value": "29"
  }, {
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "Loc01"
  }
],
  "status": "active",
  "name": "Health Level Seven International - Amherst",
  "description": "HL7 Headquarters - East",
  "telecom": [{
    "system": "phone",
    "value": "(+1) 734-677-7777"
  }
],
  "address": {
    "line": ["3300 Washtenaw Avenue, Suite 227"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002",
    "country": "USA"
  },
  "position": {
    "longitude": -72.519854,
    "latitude": 42.373222
  },
  "managingOrganization": {
    "display": "Health Level Seven International"
  }
}, {
  "fullUrl": "https://<datahub_server>/Location/SERGETemp",
  "resource": {
    "resourceType": "Location",
    "id": "SERGETemp",
    "meta": {
      "versionId": "0",
      "lastUpdated": "2021-01-20T13:25:32.958+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-location"]
    },
    "identifier": [{
      "type": {
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/v2-0301",
          "code": "HL7"
        }
      ]
    }, {
      "system": "NYP:tenant4",
      "value": "SERGETemp"
    }, {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "SERGETemp"
    }
  ]
},
],

```

```

        "status": "active",
        "name": "Health Level Seven International",
        "description": "CE4 HL7 Headquarters WEST",
        "type": [{
            "coding": [{
                "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
                "code": "NCCF"
            }]
        }],
        "physicalType": {
            "coding": [{
                "system": "http://terminology.hl7.org/CodeSystem/v2-0307",
                "code": "ro"
            }]
        },
        "text": "ro 4"
    }
}

```

## DaVinci PDEX Plan Net

```

[base] / Location ? name = XXXX

GET /Location?name=level%20seven&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Location

{
  "resourceType": "Bundle",
  "id": "bcfc3598-5a1c-4b80-960b-0db82e942f42",
  "meta": {
    "lastUpdated": "2021-01-24T03:02:34.600+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Location?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-Location&address-postalcode=48104"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Location/_hl7",
    "resource": {
      "resourceType": "Location",
      "id": "_hl7",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2012-12-12T00:00:00.000+00:00",
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Location"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n      Health Level Seven International<br/>\n\n      3300 Washtenaw Avenue, Suite 227<br/>\n\n      Ann Arbor, MI 48104<br/>\n\n      USA<br/>\n\n      (+1) 734-677-7777 (phone)<br/>\n\n      (+1) 734-677-6622 (fax)<br/>\n\n      E-mail: <a href='mailto:hq@HL7.org'>hq@HL7.org</a>\n    </div>"
      },
      "identifier": [{
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "_hl7"
      }]
    }
  ]
}

```

```

    ],
    "status": "active",
    "name": "Health Level",
    "description": "HL7 Headquarters",
    "mode": "instance",
    "type": [{
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
        "code": "SLEEP",
        "display": "Sleep disorders unit"
      }
    ]
  }
],
"telecom": [{
  "system": "phone",
  "value": "(+1) 734-677-7777"
}, {
  "system": "fax",
  "value": "(+1) 734-677-6622"
}, {
  "system": "email",
  "value": "hq@HL7.org"
}
],
"address": {
  "line": ["3300 Washtenaw Avenue, Suite 227"],
  "city": "Ann Arbor",
  "state": "MI",
  "postalCode": "48104",
  "country": "USA"
},
"physicalType": {
  "coding": [{
    "system": "http://terminology.hl7.org/CodeSystem/location-physical-type",
    "code": "bu",
    "display": "Building"
  }
]
},
"position": {
  "longitude": 42.2565,
  "latitude": -83.69471
}
}
]
}

```

## [base]/Location?address=XXXXX

### US Core

```
[base] / Location ? address = XXXX
```

```
GET /Location?address=3300%20Washtenaw%20Avenue%20Suite%20227&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-location
```

```

{
  "resourceType": "Bundle",
  "id": "28ceb76d-cddf-43aa-96ff-ae89b6b6d34",
  "meta": {
    "lastUpdated": "2021-01-24T02:57:27.724+00:00"
  },
  "type": "searchset",

```



```

"total": 2,
"link": [{
  "relation": "self",
  "url": "https://<datahub_server>/Location?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%2FStructureDefinition%2Fus-core-location&address=3300%20Washtenaw%20Avenue%20Suite%20227"
}],
"entry": [{
  "fullUrl": "https://<datahub_server>/Location/_hl7",
  "resource": {
    "resourceType": "Location",
    "id": "_hl7",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2012-12-12T00:00:00.000+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-location"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n      Health Level Seven International<br/>\n\t\t\t\t\t3300 Washtenaw Avenue, Suite 227<br/>\n\t\t\t\t\tAnn Arbor, MI 48104<br />\n\t\t\t\t\tUSA<br/>\n\t\t\t\t\t(+1) 734-677-7777 (phone)<br/>\n\t\t\t\t\t(+1) 734-677-6622 (fax)<br />\n\t\t\t\t\tE-mail: <a href='mailto:hq@HL7.org'>hq@HL7.org</a>\n    </div>"
    },
    "identifier": [{
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "_hl7"
    }
  ],
  "status": "active",
  "name": "Health Level",
  "description": "HL7 Headquarters",
  "mode": "instance",
  "type": [{
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
      "code": "SLEEP",
      "display": "Sleep disorders unit"
    }
  ]
}],
  "telecom": [{
    "system": "phone",
    "value": "(+1) 734-677-7777"
  }, {
    "system": "fax",
    "value": "(+1) 734-677-6622"
  }, {
    "system": "email",
    "value": "hq@HL7.org"
  }
],
  "address": {
    "line": ["3300 Washtenaw Avenue, Suite 227"],
    "city": "Ann Arbor",
    "state": "MI",
    "postalCode": "48104",
    "country": "USA"
  },
  "physicalType": {
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/location-physical-type",
      "code": "bu",
      "display": "Building"
    }
  ]
},
  "position": {
    "longitude": 42.2565,

```



```

    "type": "searchset",
    "total": 2,
    "link": [{
      "relation": "self",
      "url": "https://<datahub_server>/Location?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-
pdex-plan-net%2FStructureDefinition%2Fplannet-Location&address=3300%20Washtenaw%20Avenue%20Suite%20227"
    }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Location/_hl7",
    "resource": {
      "resourceType": "Location",
      "id": "_hl7",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2012-12-12T00:00:00.000+00:00",
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Location"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n      Health Level Seven
International<br/>\n\t\t\t\t3300 Washtenaw Avenue, Suite 227<br/>\n\t\t\t\tAnn Arbor, MI 48104<br
/>\n\t\t\t\tUSA<br/>\n\t\t\t\t(+1) 734-677-7777 (phone)<br/>\n\t\t\t\t(+1) 734-677-6622 (fax)<br
/>\n\t\t\t\tE-mail: <a href=\"mailto:hq@HL7.org\">hq@HL7.org</a>\n    </div>"
      },
      "identifier": [{
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "_hl7"
      }
    ],
    "status": "active",
    "name": "Health Level",
    "description": "HL7 Headquarters",
    "mode": "instance",
    "type": [{
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
        "code": "SLEEP",
        "display": "Sleep disorders unit"
      }
    ]
  }
],
"telecom": [{
  "system": "phone",
  "value": "(+1) 734-677-7777"
}, {
  "system": "fax",
  "value": "(+1) 734-677-6622"
}, {
  "system": "email",
  "value": "hq@HL7.org"
}
],
"address": {
  "line": ["3300 Washtenaw Avenue, Suite 227"],
  "city": "Ann Arbor",
  "state": "MI",
  "postalCode": "48104",
  "country": "USA"
},
"physicalType": {
  "coding": [{
    "system": "http://terminology.hl7.org/CodeSystem/location-physical-type",
    "code": "bu",
    "display": "Building"
  }
]
}
},
]

```



```

location
{
  "resourceType": "Bundle",
  "id": "324469bd-46ae-4f09-a105-6e7bb73e618c",
  "meta": {
    "lastUpdated": "2021-01-23T02:12:55.735+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Location?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%2FStructureDefinition%2Fus-core-location&address-postalcode=48104"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Location/_hl7",
    "resource": {
      "resourceType": "Location",
      "id": "_hl7",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2012-12-12T00:00:00.000+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-location"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n      Health Level Seven International<br/>\n\n      3300 Washtenaw Avenue, Suite 227<br/>\n\n      Ann Arbor, MI 48104<br />\n\n      (+1) 734-677-7777 (phone)<br/>\n\n      (+1) 734-677-6622 (fax)<br />\n\n      E-mail: <a href='mailto:hq@HL7.org'>hq@HL7.org</a>\n    </div>"
      },
      "identifier": [{
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "_hl7"
      }
],
      "status": "active",
      "name": "Health Level",
      "description": "HL7 Headquarters",
      "mode": "instance",
      "type": [{
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
          "code": "SLEEP",
          "display": "Sleep disorders unit"
        }
      ]
    }
],
    "telecom": [{
      "system": "phone",
      "value": "(+1) 734-677-7777"
    }, {
      "system": "fax",
      "value": "(+1) 734-677-6622"
    }, {
      "system": "email",
      "value": "hq@HL7.org"
    }
],
    "address": {
      "line": ["3300 Washtenaw Avenue, Suite 227"],
      "city": "Ann Arbor",
      "state": "MI",
      "postalCode": "48104",
      "country": "USA"
    },
    "physicalType": {

```

```

        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/location-physical-type",
          "code": "bu",
          "display": "Building"
        }],
        "position": {
          "longitude": 42.2565,
          "latitude": -83.69471
        }
      }
    ]
  }
}

```

## DaVinci PDEX Plan Net

```
[base] / Location ? address - postalcode = XXXX
```

```
GET /Location?address-postalcode=48104&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Location
```

```

{
  "resourceType": "Bundle",
  "id": "bcfc3598-5a1c-4b80-960b-0db82e942f42",
  "meta": {
    "lastUpdated": "2021-01-24T03:02:34.600+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Location?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-Location&address-postalcode=48104"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Location/_hl7",
    "resource": {
      "resourceType": "Location",
      "id": "_hl7",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2012-12-12T00:00:00.000+00:00",
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Location"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n      Health Level Seven International<br/>\n\t\t\t\t\t3300 Washtenaw Avenue, Suite 227<br/>\n\t\t\t\t\tAnn Arbor, MI 48104<br/>\n\t\t\t\t\tUSA<br/>\n\t\t\t\t\t(+1) 734-677-7777 (phone)<br/>\n\t\t\t\t\t(+1) 734-677-6622 (fax)<br/>\n\t\t\t\t\tE-mail: <a href='mailto:hq@HL7.org'>hq@HL7.org</a>\n    </div>"
      },
      "identifier": [{
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "_hl7"
      }],
      "status": "active",
      "name": "Health Level",
      "description": "HL7 Headquarters",
      "mode": "instance",
      "type": [{
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",

```

```

        "code": "SLEEP",
        "display": "Sleep disorders unit"
      }
    ]
  },
  "telecom": [
    {
      "system": "phone",
      "value": "(+1) 734-677-7777"
    },
    {
      "system": "fax",
      "value": "(+1) 734-677-6622"
    },
    {
      "system": "email",
      "value": "hq@HL7.org"
    }
  ],
  "address": {
    "line": ["3300 Washtenaw Avenue, Suite 227"],
    "city": "Ann Arbor",
    "state": "MI",
    "postalCode": "48104",
    "country": "USA"
  },
  "physicalType": {
    "coding": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/location-physical-type",
        "code": "bu",
        "display": "Building"
      }
    ]
  },
  "position": {
    "longitude": 42.2565,
    "latitude": -83.69471
  }
}

```

## [base]/Location?identifier=[system][value]

### US Core

```

[base] / Location ? identifier = [system] | [value]

GET /Location?identifier=http://www.acme.org/location|29&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-location

{
  "resourceType": "Bundle",
  "id": "61668444-ad99-47fc-94d5-087bc7772992",
  "meta": {
    "lastUpdated": "2021-01-24T02:48:59.175+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Location?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%2FStructureDefinition%2Fus-core-location&identifier=http%3A%2F%2Fwww.acme.org%2Flocation%7C29"
    }
  ],
  "entry": [

```





```

        "url": "https://<datahub_server>/Location?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-
pdex-plan-net%2FStructureDefinition%2Fplannet-Location&identifier=http%3A%2F%2Fwww.acme.org%2Flocation%7C29"
    },
    "entry": [{
        "fullUrl": "https://<datahub_server>/Location/Loc01",
        "resource": {
            "resourceType": "Location",
            "id": "Loc01",
            "meta": {
                "versionId": "1",
                "lastUpdated": "2020-11-25T06:08:40.285+00:00",
                "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Location"],
                "tag": [{
                    "system": "tranzform-apim-request-ns",
                    "code": "user-request-id",
                    "display": "fd2cfb9f-5b51-4e92-b8ca-cdd096fedf6c\t\t\t1"
                }]
            },
            "identifier": [{
                "system": "http://www.acme.org/location",
                "value": "29"
            }, {
                "use": "official",
                "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
                "value": "Loc01"
            }]
        },
        "status": "active",
        "name": "Health Level Seven International - Amherst",
        "description": "HL7 Headquarters - East",
        "telecom": [{
            "system": "phone",
            "value": "(+1) 734-677-7777"
        }],
        "address": {
            "line": ["3300 Washtenaw Avenue, Suite 227"],
            "city": "Amherst",
            "state": "MA",
            "postalCode": "01002",
            "country": "USA"
        },
        "position": {
            "longitude": -72.519854,
            "latitude": 42.373222
        },
        "managingOrganization": {
            "display": "Health Level Seven International"
        }
    }]
}

```

---

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# Medication

## Use Case

A member uses a mobile application to find out information about medications that they are taking. The application UI calls an external endpoint which returns the medication information in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Medication?code={system}[[value]
- GET [base]/Medication?identifier={system}[[value]
- GET [base]/Medication?manufacturer=[reference]&status={system}[[value]
- GET [base]/Medication?expiration-date={gt|lt|ge|le}[date]{&date={gt|lt|ge|le}[date]
- GET [base]/Medication?ingredient={system}[[value]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Medication Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

[base]/Medication?code={system}|[value]

```
[base] /Medication?code = {system}|[value]
```

```
GET /Medication?code=http://snomed.info/sct|430127000
```

```
{
  "resourceType": "Bundle",
  "id": "1a3cfeca-3d21-4665-8634-e25d13245205",
  "meta": {
    "lastUpdated": "2021-01-26T00:32:53.818+00:00"
  },
  "type": "searchset",
  "total": 4,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Medication?code=430127000"
    },
    {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=c8628713-0b7e-53ff-a93f-3cd9e4319617&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Medication/a3e36e9f-f7bf-4b51-8029-7018424dc59e",
      "resource": {
        "resourceType": "Medication",
        "id": "a3e36e9f-f7bf-4b51-8029-7018424dc59e",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-08-07T14:41:24.436+00:00",
          "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-medication"],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "040799f7-c8a3-4506-8579-1d85a487701c\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: med0310</p><p><b>contained</b>: </p><p><b>code</b>: Oral Form Oxycodone (product) <span>(Details : {SNOMED CT code '430127000' = 'Oral form oxycodone', given as 'Oral Form Oxycodone (product)'}</span></p><p><b>form</b>: Tablet dose form (qualifier value) <span>(Details : {SNOMED CT code '385055001' = 'Tablet', given as 'Tablet dose form (qualifier value)'}</span></p><h3>Ingredients</h3><table><tr><td>-</td><td><b>Item[x]</b></td><td><b>Strength</b></td></tr><tr><td>*</td><td>id: sub03; Oxycodone (substance) <span>(Details : {SNOMED CT code '55452001' = 'Oxycodone', given as 'Oxycodone (substance)'}</span></td><td>5 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span> (Details: http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></td></tr></table></div>"
        },
        "identifier": [
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "a3e36e9f-f7bf-4b51-8029-7018424dc59e"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "430127000",
            }
          ]
        }
      }
    }
  ]
}
```

```

      "display": "Oral Form Oxycodone (product)"
    }
  ],
  "status": "active",
  "form": {
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "385055001",
      "display": "Tablet dose form (qualifier value)"
    }]
  },
  "ingredient": [{
    "itemReference": {
      "reference": "http://example.org/fhir/Substance/sub03"
    },
    "strength": {
      "numerator": {
        "value": 5,
        "system": "http://unitsofmeasure.org",
        "code": "mg"
      },
      "denominator": {
        "value": 1,
        "system": "http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm",
        "code": "TAB"
      }
    }
  }],
  "fullUrl": "https://<datahub_server>/Medication/ff3b58c8-1c99-4e35-844e-3d699d2be7fb",
  "resource": {
    "resourceType": "Medication",
    "id": "ff3b58c8-1c99-4e35-844e-3d699d2be7fb",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-08-07T14:42:16.100+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-medication"],
      "tag": [{
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "12b9a4a8-af7c-43f7-9f7e-840aca3314f1\t\t\t1"
      }]
    }
  },
  "text": {
    "status": "generated",
    "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: med0310</p><p><b>contained</b>: </p><p><b>code</b>: Oral Form Oxycodone
(product) <span>(Details : {SNOMED CT code '430127000' = 'Oral form oxycodone', given as 'Oral Form
Oxycodone (product)'}</span></p><p><b>form</b>: Tablet dose form (qualifier value) <span>(Details :
{SNOMED CT code '385055001' = 'Tablet', given as 'Tablet dose form (qualifier value)'}</span><
/p><h3>Ingredients</h3><table><tr><td>-</td><td><b>Item [x]</b></td><td><b>Strength</b></td></tr><tr><td>*
</td><td>id: sub03; Oxycodone (substance) <span>(Details : {SNOMED CT code '55452001' = 'Oxycodone', given
as 'Oxycodone (substance)'}</span></td><td>5 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span>
(Details: http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></td></tr><
/table></div>"
  },
  "identifier": [{
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "ff3b58c8-1c99-4e35-844e-3d699d2be7fb"
  }],
  "code": {
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "430127000",

```

```

        "display": "Oral Form Oxycodone (product)"
      }
    ],
    "form": {
      "coding": [
        {
          "system": "http://snomed.info/sct",
          "code": "385055001",
          "display": "Tablet dose form (qualifier value)"
        }
      ]
    },
    "ingredient": [
      {
        "itemReference": {
          "reference": "Substance/sub03"
        },
        "strength": {
          "numerator": {
            "value": 5,
            "system": "http://unitsofmeasure.org",
            "code": "mg"
          },
          "denominator": {
            "value": 1,
            "system": "http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm",
            "code": "TAB"
          }
        }
      }
    ]
  }
}

```

### [base]/Medication?identifier={system}[value]

```

[base /Medication?identifier = {system}|[value]

GET /Medication?identifier=6d85a9f1-eef2-4758-be43-1a3d8144096b

{
  "resourceType": "Bundle",
  "id": "3e8c7235-1807-4286-b654-9176f5d22cd0",
  "meta": {
    "lastUpdated": "2021-01-26T00:34:45.307+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Medication?identifier=6d85a9f1-eef2-4758-be43-1a3d8144096b"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Medication/656565745",
      "resource": {
        "resourceType": "Medication",
        "id": "656565745",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-08-07T14:56:20.059+00:00",
          "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-medication"],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",

```

```

        "code": "user-request-id",
        "display": "a60d6efb-08d4-40a1-b41a-3df17ef38d91\t\t\t1"
    }
  ],
  "text": {
    "status": "generated",
    "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with Details</b></p><p><b>id</b>: med0308</p><p><b>contained</b>: </p><p><b>code</b>: Percocet tablet <span> (Details : {http://hl7.org/fhir/sid/ndc code '16590-619-30' = 'n/a', given as 'Percocet tablet'})</span></p><p><b>manufacturer</b>: id: org1; name: Stat Rx USA LLC</p><p><b>form</b>: Tablet dose form (qualifier value) <span>(Details : {SNOMED CT code '385055001' = 'Tablet', given as 'Tablet dose form (qualifier value)'}</span></p><blockquote><p><b>ingredient</b></p><p><b>item</b>: Oxycodone HCl <span>(Details : {RxNorm code '82063' = 'Oxycodone Hydrochloride', given as 'Oxycodone HCl'})</span></p><p><b>strength</b>: 5 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span> (Details: http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></p></blockquote><blockquote><p><b>ingredient</b></p><p><b>item</b>: Acetaminophen <span>(Details : {RxNorm code '161' = 'Acetaminophen', given as 'Acetaminophen'})</span></p><p><b>strength</b>: 325 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span> (Details: http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></p></blockquote><h3>Batches</h3><table><tr><td></td><td><b>ExpirationDate</b></td></tr><tr><td>*</td><td>658484</td><td>31/07/2020</td></tr></table></div>"
  },
  "identifier": [{
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "6d85a9f1-eef2-4758-be43-1a3d8144096b"
  }
  ],
  "code": {
    "coding": [{
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      "code": "16590-619-30",
      "display": "Percocet tablet"
    }
  ]
  },
  "manufacturer": {
    "reference": "Organization/org1"
  },
  "form": {
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "385055001",
      "display": "Tablet dose form (qualifier value)"
    }
  ]
  },
  "ingredient": [{
    "itemCodeableConcept": {
      "coding": [{
        "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
        "code": "82063",
        "display": "Oxycodone HCl"
      }
      ]
    }
  ]
  },
  "strength": {
    "numerator": {
      "value": 5,
      "system": "http://unitsofmeasure.org",
      "code": "mg"
    },
    "denominator": {
      "value": 1,
      "system": "http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm",
      "code": "TAB"
    }
  }
  }, {
    "itemCodeableConcept": {

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        "coding": [{
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "161",
          "display": "Acetaminophen"
        }
      ],
      "strength": {
        "numerator": {
          "value": 325,
          "system": "http://unitsofmeasure.org",
          "code": "mg"
        },
        "denominator": {
          "value": 1,
          "system": "http://terminology.hl7.org/CodeSystem/v3-
orderableDrugForm",
          "code": "TAB"
        }
      },
      "batch": {
        "lotNumber": "658484",
        "expirationDate": "2020-07-31"
      }
    }
  ],
}

```

### [base]/Medication?manufacturer=[reference]&status={system}][value]

```

[base] /Medication?manufacturer = [reference] & status = {system}][value]

GET /Medication?manufacturer=org1

{
  "resourceType": "Bundle",
  "id": "39d8c095-8412-4d62-8f15-ae159719abec",
  "meta": {
    "lastUpdated": "2021-01-26T00:32:00.976+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Medication?manufacturer=org1"
  }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Medication/656565745",
    "resource": {
      "resourceType": "Medication",
      "id": "656565745",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-08-07T14:56:20.059+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
medication"],
        "tag": [{
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "a60d6efb-08d4-40a1-b41a-3df17ef38d91\t\t\t\t1"
        }
      ]
    }
  }
  ],
}

```



```

      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: med0308</p><p><b>contained</b>: </p><p><b>code</b>: Percocet tablet <span>(Details : {http://hl7.org/fhir/sid/ndc code '16590-619-30' = 'n/a', given as 'Percocet tablet'})</span></p><p><b>manufacturer</b>: id: org1; name: Stat Rx USA LLC</p><p><b>form</b>: Tablet dose form (qualifier value) <span>(Details : {SNOMED CT code '385055001' = 'Tablet', given as 'Tablet dose form (qualifier value)'}</span></p><p><b>ingredient</b></p><p><b>item</b>: Oxycodone HCl <span>(Details : {RxNorm code '82063' = 'Oxycodone Hydrochloride', given as 'Oxycodone HCl'})</span></p><p><b>strength</b>: 5 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span> (Details: http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></p></blockquote><blockquote><p><b>ingredient</b></p><p><b>item</b>: Acetaminophen <span>(Details : {RxNorm code '161' = 'Acetaminophen', given as 'Acetaminophen'})</span></p><p><b>strength</b>: 325 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span> (Details: http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></p></blockquote><h3>Batches</h3><table><tr><td><b>LotNumber</b></td><td><b>ExpirationDate</b></td></tr><tr><td>*</td><td>658484</td><td>31/07/2020</td></tr></table></div>"
      },
      "identifier": [{
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "6d85a9f1-eef2-4758-be43-1a3d8144096b"
      }],
      "code": {
        "coding": [{
          "system": "http://hl7.org/fhir/sid/ndc",
          "code": "16590-619-30",
          "display": "Percocet tablet"
        }]
      },
      "manufacturer": {
        "reference": "Organization/org1"
      },
      "form": {
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "385055001",
          "display": "Tablet dose form (qualifier value)"
        }]
      },
      "ingredient": [{
        "itemCodeableConcept": {
          "coding": [{
            "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
            "code": "82063",
            "display": "Oxycodone HCl"
          }]
        },
        "strength": {
          "numerator": {
            "value": 5,
            "system": "http://unitsofmeasure.org",
            "code": "mg"
          },
          "denominator": {
            "value": 1,
            "system": "http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm",
            "code": "TAB"
          }
        }
      }],
      "itemCodeableConcept": {
        "coding": [{
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "161",
          "display": "Acetaminophen"
        }]
      }
    }
  }
}

```

```

    },
    "strength": {
      "numerator": {
        "value": 325,
        "system": "http://unitsofmeasure.org",
        "code": "mg"
      },
      "denominator": {
        "value": 1,
        "system": "http://terminology.hl7.org/CodeSystem/v3-
orderableDrugForm",
        "code": "TAB"
      }
    },
    "batch": {
      "lotNumber": "658484",
      "expirationDate": "2020-07-31"
    },
    {
      "fullUrl": "https://<datahub_server>/Medication/0308",
      "resource": {
        "resourceType": "Medication",
        "id": "0308",
        "meta": {
          "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
medication"]
        }
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'\><p><b>Generated
Narrative with Details</b></p><p><b>id</b>: med0308</p><p><b>contained</b>: </p><p><b>code</b>: Percocet
tablet <span>(Details : {http://hl7.org/fhir/sid/ndc code '16590-619-30' = 'n/a', given as 'Percocet
tablet'})</span></p><p><b>manufacturer</b>: id: org1; name: Stat Rx USA LLC</p><p><b>form</b>: Tablet dose
form (qualifier value) <span>(Details : {SNOMED CT code '385055001' = 'Tablet', given as 'Tablet dose form
(qualifier value)'}</span></p><blockquote><p><b>ingredient</b></p><p><b>item</b>: Oxycodone HCl <span>
(Details : {RxNorm code '82063' = 'Oxycodone Hydrochloride', given as 'Oxycodone HCl'})</span><
/p><p><b>strength</b>: 5 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span> (Details:
http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></p><
/blockquote><blockquote><p><b>ingredient</b></p><p><b>item</b>: Acetaminophen <span>(Details : {RxNorm code
'161' = 'Acetaminophen', given as 'Acetaminophen'})</span></p><p><b>strength</b>: 325 mg<span> (Details:
UCUM code mg = 'mg')</span>/1 TAB<span> (Details: http://terminology.hl7.org/CodeSystem/v3-
orderableDrugForm code TAB = 'Tablet')</span></p></blockquote><h3>Batches</h3><table><tr><td><
/td><td><b>LotNumber</b></td><td><b>ExpirationDate</b></td></tr><tr><td>*</td><td>658484</td><td>31/07/2020<
/td></tr></table></div>"
      },
      "contained": [{
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        "id": "org1",
        "name": "Stat Rx USA LLC"
      }
    ],
    "code": {
      "coding": [{
        "system": "http://hl7.org/fhir/sid/ndc",
        "code": "16590-619-30",
        "display": "Percocet tablet"
      }
    ]
  },
  "manufacturer": {
    "reference": "#org1"
  },
  "form": {
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "385055001",

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"resourceType": "Bundle",
"id": "abe8a97c-686f-45df-ad1e-603064711e10",
"meta": {
  "lastUpdated": "2021-01-26T00:31:09.616+00:00"
},
"type": "searchset",
"total": 2,
"link": [{
  "relation": "self",
  "url": "https://<datahub_server>/Medication?expiration-date=gt2016-01-01"
}],
"entry": [{
  "fullUrl": "https://<datahub_server>/Medication/656565745",
  "resource": {
    "resourceType": "Medication",
    "id": "656565745",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-08-07T14:56:20.059+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-medication"],
      "tag": [{
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "a60d6efb-08d4-40a1-b41a-3df17ef38d91\t\t\t1"
      }]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: med0308</p><p><b>contained</b>: </p><p><b>code</b>: Percocet tablet <span>(Details : {http://hl7.org/fhir/sid/ndc code '16590-619-30' = 'n/a', given as 'Percocet tablet'})</span></p><p><b>manufacturer</b>: id: org1; name: Stat Rx USA LLC</p><p><b>form</b>: Tablet dose form (qualifier value) <span>(Details : {SNOMED CT code '385055001' = 'Tablet', given as 'Tablet dose form (qualifier value)'}</span></p><p><b>ingredient</b></p><p><b>item</b>: Oxycodone HCl <span>(Details : {RxNorm code '82063' = 'Oxycodone Hydrochloride', given as 'Oxycodone HCl'})</span></p><p><b>strength</b>: 5 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span> (Details: http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></p></blockquote><blockquote><p><b>ingredient</b></p><p><b>item</b>: Acetaminophen <span>(Details : {RxNorm code '161' = 'Acetaminophen', given as 'Acetaminophen'})</span></p><p><b>strength</b>: 325 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span> (Details: http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></p></blockquote><h3>Batches</h3><table><tr><td><b>LotNumber</b></td><td><b>ExpirationDate</b></td><tr><tr><td>*</td><td>658484</td><td>31/07/2020</td></tr></table></div>"
    },
    "identifier": [{
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      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
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    }],
    "code": {
      "coding": [{
        "system": "http://hl7.org/fhir/sid/ndc",
        "code": "16590-619-30",
        "display": "Percocet tablet"
      }]
    },
    "manufacturer": {
      "reference": "Organization/org1"
    },
    "form": {
      "coding": [{
        "system": "http://snomed.info/sct",
        "code": "385055001",
        "display": "Tablet dose form (qualifier value)"
      }]
    }
  }
}

```

```

    ],
    "ingredient": [
      {
        "itemCodeableConcept": {
          "coding": [
            {
              "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
              "code": "82063",
              "display": "Oxycodone HCl"
            }
          ]
        }
      },
      {
        "strength": {
          "numerator": {
            "value": 5,
            "system": "http://unitsofmeasure.org",
            "code": "mg"
          },
          "denominator": {
            "value": 1,
            "system": "http://terminology.hl7.org/CodeSystem/v3-
orderableDrugForm",
            "code": "TAB"
          }
        }
      },
      {
        "itemCodeableConcept": {
          "coding": [
            {
              "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
              "code": "161",
              "display": "Acetaminophen"
            }
          ]
        }
      },
      {
        "strength": {
          "numerator": {
            "value": 325,
            "system": "http://unitsofmeasure.org",
            "code": "mg"
          },
          "denominator": {
            "value": 1,
            "system": "http://terminology.hl7.org/CodeSystem/v3-
orderableDrugForm",
            "code": "TAB"
          }
        }
      }
    ],
    "batch": {
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      "expirationDate": "2020-07-31"
    }
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    "resource": {
      "resourceType": "Medication",
      "id": "0308",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
medication"]
      }
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated
Narrative with Details</b></p><p><b>id</b>: med0308</p><p><b>contained</b>: </p><p><b>code</b>: Percocet
tablet <span>(Details : {http://hl7.org/fhir/sid/ndc code '16590-619-30' = 'n/a', given as 'Percocet
tablet'})</span></p><p><b>manufacturer</b>: id: org1; name: Stat Rx USA LLC</p><p><b>form</b>: Tablet dose
form (qualifier value) <span>(Details : {SNOMED CT code '385055001' = 'Tablet', given as 'Tablet dose form
(qualifier value)'}</span></p><blockquote><p><b>ingredient</b></p><p><b>item</b>: Oxycodone HCl <span>
(Details : {RxNorm code '82063' = 'Oxycodone Hydrochloride', given as 'Oxycodone HCl'})</span><

```

```

/p><p><b>strength</b>: 5 mg<span> (Details: UCUM code mg = 'mg')</span>/1 TAB<span> (Details:
http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm code TAB = 'Tablet')</span></p><
/blockquote><blockquote><p><b>ingredient</b></p><p><b>item</b>: Acetaminophen <span>(Details : {RxNorm code
'161' = 'Acetaminophen', given as 'Acetaminophen'})</span></p><p><b>strength</b>: 325 mg<span> (Details:
UCUM code mg = 'mg')</span>/1 TAB<span> (Details: http://terminology.hl7.org/CodeSystem/v3-
orderableDrugForm code TAB = 'Tablet')</span></p></blockquote><h3>Batches</h3><table><tr><td>-<
/td><td><b>LotNumber</b></td><td><b>ExpirationDate</b></td><tr><td>*</td><td>658484</td><td>31/07/2020<
/td></tr></table></div>"
    },
    "contained": [{
      "resourceType": "Organization",
      "id": "org1",
      "name": "Stat Rx USA LLC"
    }
  ],
  "code": {
    "coding": [{
      "system": "http://hl7.org/fhir/sid/ndc",
      "code": "16590-619-30",
      "display": "Percocet tablet"
    }
  ]
},
"manufacturer": {
  "reference": "#org1"
},
"form": {
  "coding": [{
    "system": "http://snomed.info/sct",
    "code": "385055001",
    "display": "Tablet dose form (qualifier value)"
  }
]
},
"ingredient": [{
  "itemCodeableConcept": {
    "coding": [{
      "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
      "code": "82063",
      "display": "Oxycodone HCl"
    }
  ]
},
  "strength": {
    "numerator": {
      "value": 5,
      "system": "http://unitsofmeasure.org",
      "code": "mg"
    },
    "denominator": {
      "value": 1,
      "system": "http://terminology.hl7.org/CodeSystem/v3-
orderableDrugForm",
      "code": "TAB"
    }
  }
}, {
  "itemCodeableConcept": {
    "coding": [{
      "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
      "code": "161",
      "display": "Acetaminophen"
    }
  ]
},
  "strength": {
    "numerator": {
      "value": 325,
      "system": "http://unitsofmeasure.org",
      "code": "mg"
    }
  }
},

```

```
orderableDrugForm",  
    "denominator": {  
      "value": 1,  
      "system": "http://terminology.hl7.org/CodeSystem/v3-  
      "code": "TAB"  
    }  
  },  
  "batch": {  
    "lotNumber": "658484",  
    "expirationDate": "2020-07-31"  
  }  
}
```

---

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# MedicationDispense

## Use Case

A member has been prescribed a medication. The prescription has been sent to their pharmacy. When the pharmacy system responds to the medication order for the member, the result is a medication dispense. The MedicationDispense is an event resource from the perspective of a FHIR workflow. It includes a description of the medication and instructions for administering the medication.

## Supported GET Requests

- GET [base]/MedicationDispense?medication=[reference]
- GET [base]/MedicationDispense?code={system}[[value]
- GET [base]/MedicationDispense?patient=[reference]
- GET [base]/MedicationDispense?patient=[reference]&status={system}[[value]
- GET [base]/MedicationDispense?subject=[reference]]
- GET [base]/MedicationDispense?subject=[reference]]&status={system}[[value]

## Response Parameters

The response parameters for the GET method are as follows:

- [R4](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.



422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/MedicationDispense?patient=[reference]&status={system}[[value]

```
[base]/MedicationDispense?patient=[reference]&status={system} | [value]

GET [base]/MedicationDispense?patient=Ptp01&status=completed

{
  "resourceType": "Bundle",
  "id": "d19bf137-437b-4dd1-be71-fd9d6fc6e3ba",
  "meta": {
    "lastUpdated": "2021-05-04T16:29:30.464+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/datahub/fhir/MedicationDispense?patient=Ptp01&status=completed"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/datahub/fhir/MedicationDispense/meddisp008",
      "resource": {
        "resourceType": "MedicationDispense",
        "id": "meddisp008",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2021-03-19T23:53:24.720+00:00",
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/MedicationDispense"
          ],
          "tag": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/common-tags",
              "code": "user-request-id",
              "display": "fdae47d3-a42b-4fe5-b503-44316a4b638b\t\t\t1"
            }
          ]
        },
        "identifier": [
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "meddisp008"
          },
          {
            "system": "http://terminology.hl7.org/CodeSystem/common-tags/source-system-id/apim",
            "value": "meddisp008"
          },
          {
            "use": "official",
            "system": "http://terminology.hl7.org/CodeSystem/common-tags/logical-identifier",
            "value": "meddisp008"
          }
        ],
        "status": "completed",
        "category": {
          "coding": [

```

```

        {
          "system": "http://terminology.hl7.org/fhir/CodeSystem/medicationdispense-
category",
          "code": "outpatient",
          "display": "Outpatient"
        }
      ],
    },
    "medicationCodeableConcept": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/sid/ndc",
          "code": "49999-051-30",
          "display": "Vicodin 5mg Hydrocodone, 500mg Acetaminophen tablet "
        }
      ]
    },
    "subject": {
      "reference": "Patient/Ptp01"
    },
    "performer": [
      {
        "function": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/medicationdispense-
performer-function",
              "code": "finalchecker",
              "display": "Final Checker"
            }
          ]
        },
        "actor": {
          "reference": "Practitioner/Pracp01"
        }
      }
    ],
    "location": {
      "reference": "Location/Locp01"
    },
    "type": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/v3-ActCode",
          "code": "EM",
          "display": "Emergency Supply"
        }
      ]
    },
    "quantity": {
      "value": 12,
      "unit": "Vial",
      "system": "http://terminology.hl7.org/CodeSystem/v3-orderableDrugForm",
      "code": "Vial"
    },
    "daysSupply": {
      "value": 3,
      "unit": "Day",
      "system": "http://unitsofmeasure.org",
      "code": "d"
    },
    "whenPrepared": "2015-01-15T10:20:00Z",
    "whenHandedOver": "2015-01-15T16:20:00Z",
    "destination": {
      "reference": "Location/Locp01"
    },
    "receiver": [
      {
        "reference": "Patient/Ptp01"
      }
    ]
  ],

```

```

    "dosageInstruction": [
      {
        "sequence": 1,
        "text": "one to two tablets every 4-6 hours as needed for rib pain",
        "additionalInstruction": [
          {
            "coding": [
              {
                "system": "http://snomed.info/sct",
                "code": "418914006",
                "display": "Warning. May cause drowsiness. If affected do not drive
or operate machinery. Avoid alcoholic drink (qualifier value)"
              }
            ]
          }
        ],
        "timing": {
          "event": [
            "2015-01-15T22:00:00+11:00"
          ],
          "repeat": {
            "frequency": 3,
            "period": 1,
            "periodUnit": "d"
          }
        },
        "asNeededCodeableConcept": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "297217002",
              "display": "Rib Pain (finding)"
            }
          ]
        },
        "route": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "394899003",
              "display": "oral administration of treatment"
            }
          ]
        },
        "method": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "420620005",
              "display": "Push - dosing instruction imperative (qualifier value)"
            }
          ]
        },
        "doseAndRate": [
          {
            "type": {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/dose-rate-
type",
                  "code": "ordered",
                  "display": "Ordered"
                }
              ]
            },
            "doseRange": {
              "low": {
                "value": 1,
                "unit": "TAB",
                "system": "http://terminology.hl7.org/CodeSystem/v3-
orderableDrugForm",

```

```

        "code": "TAB"
      },
      "high": {
        "value": 2,
        "unit": "TAB",
        "system": "http://terminology.hl7.org/CodeSystem/v3-
orderableDrugForm",
        "code": "TAB"
      }
    },
    "rateRatio": {
      "numerator": {
        "value": 100,
        "system": "http://unitsofmeasure.org",
        "code": "mL"
      },
      "denominator": {
        "value": 1,
        "system": "http://unitsofmeasure.org",
        "code": "d"
      }
    }
  ],
  "substitution": {
    "wasSubstituted": true,
    "type": {
      "coding": [
        {
          "system": "https://www.hl7.org/fhir/v3/substanceAdminSubstitution/cs.html",
          "code": "E",
          "display": "equivalent"
        }
      ]
    }
  }
}

```

---

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# MedicationRequest

## Use Case

A member has been prescribed a medication by their provider. They use a mobile application to request a refill of a medication they are currently taking. The application UI calls an external endpoint which sends the medication information in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/MedicationRequest?patient=[reference]&intent=order&status={system}[[value]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core MedicationRequest Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

## US Core

```
[base] / MedicationRequest ? patient = [reference] & intent = order & status = {system} | [value]

GET MedicationRequest?patient=M12345&intent=order&status=completed&_include=MedicationRequest:medication

{
  "resourceType": "Bundle",
  "id": "b6c09375-4767-410f-9c2a-da6af33bdb23",
  "meta": {
    "lastUpdated": "2021-01-25T00:17:00.494+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/MedicationRequest?_include=MedicationRequest%
3Amedication&intent=order&patient=M12345&status=completed"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/MedicationRequest/619185",
    "resource": {
      "resourceType": "MedicationRequest",
      "id": "619185",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-02-11T09:03:51.446+00:00",
        "source": "#YiCB0BwbDHT3gseI",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-
medicationrequest"],
        "tag": [{
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "9287d12e-78a8-4884-8b8d-c8b8e849daff\t\t\t1"
        }
      ]
    },
    "identifier": [{
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "619185"
    }
  ],
  "status": "completed",
  "intent": "order",
  "medicationReference": {
    "reference": "Medication/162609"
  },
  "subject": {
    "reference": "Patient/M12345"
  },
  "dosageInstruction": [{
    "text": "10 drops four times daily - apply in mouth using cotton swab or finger",
    "route": {
      "coding": [{
        "code": "12345",
        "display": "ORAAL"
      }
    ],
    "text": "ORAAL"
  }
],
  "doseAndRate": [{

```

```

        "doseQuantity": {
          "value": 10,
          "unit": "mg",
          "system": "http://terminology.hl7.org/CodeSystem/dose-rate-type",
          "code": "12346"
        }
      ],
      "dispenseRequest": {
        "validityPeriod": {
          "start": "2015-01-15",
          "end": "2016-01-15"
        }
      },
      "search": {
        "mode": "match"
      }
    }, {
      "fullUrl": "https://<datahub_server>/Medication/162609",
      "resource": {
        "resourceType": "Medication",
        "id": "162609",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-11-25T06:08:40.847+00:00",
          "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-medication"]
        },
        "identifier": [{
          "use": "official",
          "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
          "value": "162609"
        }
      ],
      "code": {
        "coding": [{
          "system": "http://www.whocc.no/atc",
          "code": "J05AG01",
          "display": "NEVIRAPINE"
        }
      ],
      "text": "NEVIRAPINE TABLET MGA 400MG"
    },
    "search": {
      "mode": "include"
    }
  }
}

```

---

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# Observation - Laboratory Result

## Use Case

The laboratory result observation profile represents an individual test and result, or a nested set of tests, such as microbial susceptibility panel. The DiagnosticReport endpoint is used to group and summarize these individual test results.

## Supported GET Requests

- GET [base]/Observation?patient=[reference]&category=http://terminology.hl7.org/CodeSystem/observation-category|laboratory
- GET [base]/Observation?patient=[reference]&code=[system]][value]
- GET [base]/Observation?patient=[reference]&category=http://terminology.hl7.org/CodeSystem/observation-category|laboratory&date={gt|lt|ge|le}[date]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Laboratory Result Observation Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.



# Sample Requests and Responses

[base/Observation?patient=\[reference\]&category=http://terminology.hl7.org/CodeSystem/observation-category|laboratory](#)

```
[base] / Observation ? patient = [reference] & category = http : //terminology.hl7.org/CodeSystem
/observation-category|laboratory

GET /Observation?patient=07710040201&category=http://terminology.hl7.org/CodeSystem/observation-
category|laboratory

{
  "resourceType": "Bundle",
  "id": "a65951c3-b052-479f-adae-9f8beff11dc0",
  "meta": {
    "lastUpdated": "2021-01-25T00:33:52.637+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%
2FCodeSystem%2Fobservation-category%7Claboratory&patient=07710040201"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Observation/98765",
    "resource": {
      "resourceType": "Observation",
      "id": "98765",
      "meta": {
        "profile": ["http://tzf.com/fhir/StructureDefinition/Observation"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: bmi</p><p><b>meta</b>: </p><p><b>status</b>: final</p><p><b>category</b>:
Vital Signs <span>(Details : {http://hl7.org/fhir/observation-category code 'vital-signs' = 'Vital Signs',
given as 'Vital Signs'})</span></p><p><b>code</b>: BMI <span>(Details : {LOINC code '39156-5' = 'Body mass
index (BMI) [Ratio]', given as 'Body mass index (BMI) [Ratio]'}</span></p><p><b>subject</b>: <a>Patient
/example</a></p><p><b>effective</b>: Jul 2, 1999</p><p><b>value</b>: 16.2 kg/m2<span> (Details: UCUM code kg
/m2 = 'kg/m2')</span></p></div>"
      },
      "status": "final",
      "category": [{
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "laboratory",
          "display": "laboratory"
        }
        ],
        "text": "Vital Signs"
      }
    ],
    "code": {
      "coding": [{
        "system": "http://loinc.org",
        "code": "2339-0",
        "display": "Body mass index (BMI) [Ratio]"
      }
      ],
      "text": "BMI"
    },
    "subject": {
      "reference": "Patient/07710040201"
    }
  }
],
}
```

```

    "effectiveDateTime": "1999-07-02",
    "valueQuantity": {
      "value": 16.2,
      "unit": "kg/m2",
      "system": "http://unitsofmeasure.org",
      "code": "kg/m2"
    }
  }
}

```

[\[base\]/Observation?patient=\[reference\]&code=\[system\]\[value\]](#)

[base] / Observation ? patient = [reference] & code = [system] [value]

GET /Observation?patient=07710040201&code=http://loinc.org|2339-0

```

{
  "resourceType": "Bundle",
  "id": "a65951c3-b052-479f-adae-9f8beff11dc0",
  "meta": {
    "lastUpdated": "2021-01-25T00:33:52.637+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%2FCodeSystem%2Fobservation-category%7Claboratory&patient=07710040201"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Observation/98765",
    "resource": {
      "resourceType": "Observation",
      "id": "98765",
      "meta": {
        "profile": ["http://tzf.com/fhir/StructureDefinition/Observation"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: bmi</p><p><b>meta</b>: </p><p><b>status</b>: final</p><p><b>category</b>: Vital Signs <span>(Details : {http://hl7.org/fhir/observation-category code 'vital-signs' = 'Vital Signs', given as 'Vital Signs'})</span></p><p><b>code</b>: BMI <span>(Details : {LOINC code '39156-5' = 'Body mass index (BMI) [Ratio]', given as 'Body mass index (BMI) [Ratio]'})</span></p><p><b>subject</b>: <a>Patient /example</a></p><p><b>effective</b>: Jul 2, 1999</p><p><b>value</b>: 16.2 kg/m2<span> (Details: UCUM code kg/m2 = 'kg/m2')</span></p></div>"
      },
      "status": "final",
      "category": [{
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "laboratory",
          "display": "laboratory"
        }],
        "text": "Vital Signs"
      }],
      "code": {
        "coding": [{
          "system": "http://loinc.org",
          "code": "2339-0",
          "display": "Body mass index (BMI) [Ratio]"
        }],
      }
    }
  }],
  "code": {
    "coding": [{
      "system": "http://loinc.org",
      "code": "2339-0",
      "display": "Body mass index (BMI) [Ratio]"
    }],
  }
}

```

```

    ],
    "text": "BMI"
  },
  "subject": {
    "reference": "Patient/07710040201"
  },
  "effectiveDateTime": "1999-07-02",
  "valueQuantity": {
    "value": 16.2,
    "unit": "kg/m2",
    "system": "http://unitsofmeasure.org",
    "code": "kg/m2"
  }
}
}
}
}
}

```

[\[base\]/Observation?patient=\[reference\]&category=http://terminology.hl7.org/CodeSystem/observation-category|laboratory&date={gt|lt|ge|le}\[date\]](#)

```
[base] / Observation ? patient = [reference] & category = http : //terminology.hl7.org/CodeSystem
/observation-category|laboratory&date={gt|lt|ge|le}[date]
```

```
GET /Observation?patient=07710040201&category=http://terminology.hl7.org/CodeSystem/observation-
category|laboratory&date=ge1999-07-01
```

```

{
  "resourceType": "Bundle",
  "id": "a65951c3-b052-479f-adae-9f8beff11dc0",
  "meta": {
    "lastUpdated": "2021-01-25T00:33:52.637+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%
2FCodeSystem%2Fobservation-category%7Claboratory&patient=07710040201"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Observation/98765",
    "resource": {
      "resourceType": "Observation",
      "id": "98765",
      "meta": {
        "profile": ["http://tzf.com/fhir/StructureDefinition/Observation"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: bmi</p><p><b>meta</b>: </p><p><b>status</b>: final</p><p><b>category</b>:
Vital Signs <span>(Details : {http://hl7.org/fhir/observation-category code 'vital-signs' = 'Vital Signs',
given as 'Vital Signs'})</span></p><p><b>code</b>: BMI <span>(Details : {LOINC code '39156-5' = 'Body mass
index (BMI) [Ratio]', given as 'Body mass index (BMI) [Ratio]'})</span></p><p><b>subject</b>: <a>Patient
/example</a></p><p><b>effective</b>: Jul 2, 1999</p><p><b>value</b>: 16.2 kg/m2<span> (Details: UCUM code kg
/m2 = 'kg/m2')</span></p></div>"
      },
      "status": "final",
      "category": [{
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "laboratory",

```

```
        "display": "laboratory"
      },
    ],
    "text": "Vital Signs"
  }
],
"code": {
  "coding": [{
    "system": "http://loinc.org",
    "code": "2339-0",
    "display": "Body mass index (BMI) [Ratio]"
  }
],
  "text": "BMI"
},
"subject": {
  "reference": "Patient/07710040201"
},
"effectiveDateTime": "1999-07-02",
"valueQuantity": {
  "value": 16.2,
  "unit": "kg/m2",
  "system": "http://unitsofmeasure.org",
  "code": "kg/m2"
}
}
}
}
```

---

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# Observation - Pediatric BMI for Age Observation

## Use Case

A member accesses a mobile application to see how their baby is growing by looking at their body mass index and comparing it against the averages for their age. The application UI calls an external endpoint which returns the information in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]
- GET [base]/Observation?patient=[reference]&code=[system][value]
- GET [base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]&date={gt|lt|ge|le}

## • Response Parameters

The response parameters for the GET method are as follows:

- [US Core Pediatric BMI for Age Observation Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

[base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]

```
[base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]
```

```
GET /Observation?patient=1061418&category=http://terminology.hl7.org/CodeSystem/observation-category|vital-signs
```

```
{
  "resourceType": "Bundle",
  "id": "be0b91e3-8e83-4623-ab7a-dd151a5bc726",
  "meta": {
    "lastUpdated": "2021-01-26T21:39:44.318+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%2FCodeSystem%2Fobservation-category%7Cvital-signs&patient=1061418"
    },
    {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=3a28e947-dcb3-57d7-9672-dd742d762cc3&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Observation/0183ffb9-4a86-4840-81c2-51424b3420ac",
      "resource": {
        "resourceType": "Observation",
        "id": "0183ffb9-4a86-4840-81c2-51424b3420ac",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-01T08:47:43.984+00:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "4be85f75-8b08-4e24-aa6a-0be2bc4e612b\t\t\t1"
            }
          ]
        },
        "identifier": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "value": "59576-9"
          },
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "0183ffb9-4a86-4840-81c2-51424b3420ac"
          }
        ],
        "status": "registered",
        "category": [
          {
            "coding": [

```

```

        {
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "vital-signs",
          "display": "Vital Signs"
        }
      ],
    ],
    "code": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "59576-9",
          "display": "Body mass index (BMI) [Percentile] Per age and gender"
        }
      ],
      "text": "Pediatric bmi for age"
    },
    "subject": {
      "reference": "Patient/1061418"
    },
    "effectiveDateTime": "2013-03-11T10:28:00+01:00",
    "valueQuantity": {
      "value": 65,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "referenceRange": [
      {
        "text": "normal"
      }
    ]
  },
  {
    "fullUrl": "https://<datahub_server>/Observation/781daefb-ec7a-4624-b92a-cc047928ca21",
    "resource": {
      "resourceType": "Observation",
      "id": "781daefb-ec7a-4624-b92a-cc047928ca21",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-09-01T08:47:43.999+00:00",
        "profile": [
          "http://tzf.com/fhir/StructureDefinition/Observation"
        ],
        "tag": [
          {
            "system": "tranzform-apim-request-ns",
            "code": "user-request-id",
            "display": "3453c3e6-a839-4b10-aa19-bbf72cbfd6ff\t\t1"
          }
        ]
      },
      "identifier": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "value": "59576-9"
        },
        {
          "use": "official",
          "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
          "value": "781daefb-ec7a-4624-b92a-cc047928ca21"
        }
      ],
      "status": "registered",
      "category": [
        {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/observation-category",

```

```

        "code": "vital-signs",
        "display": "Vital Signs"
      }
    ]
  },
  "code": {
    "coding": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/observation-category",
        "code": "59576-9",
        "display": "Body mass index (BMI) [Percentile] Per age and gender"
      }
    ],
    "text": "Pediatric bmi for age"
  },
  "subject": {
    "reference": "Patient/1061418"
  },
  "effectiveDateTime": "2013-03-11T10:28:00+01:00",
  "valueQuantity": {
    "value": 65,
    "unit": "%",
    "system": "http://unitsofmeasure.org",
    "code": "%"
  },
  "referenceRange": [
    {
      "text": "normal"
    }
  ]
},
{
  "fullUrl": "https://<datahub_server>/Observation/d6131b11-1506-43f2-8579-b3ef76f2a266",
  "resource": {
    "resourceType": "Observation",
    "id": "d6131b11-1506-43f2-8579-b3ef76f2a266",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-02T00:14:41.672+00:00",
      "profile": [
        "http://tzf.com/fhir/StructureDefinition/Observation"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "67717d50-e6c0-46cf-922f-8e6541f8d076\t\t\t1"
        }
      ]
    },
    "identifier": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/observation-category",
        "value": "59576-1"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "d6131b11-1506-43f2-8579-b3ef76f2a266"
      }
    ],
    "status": "registered",
    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "vital-signs",
            "display": "Vital Signs"
          }
        ]
      }
    ]
  }
}

```



```

    ],
    "code": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "59576-1",
          "display": "Body mass index (BMI) [Percentile] Per age and gender"
        }
      ],
      "text": "Pediatric bmi for age"
    },
    "subject": {
      "reference": "Patient/1061418"
    },
    "effectiveDateTime": "2013-03-11T10:28:00+01:00",
    "valueQuantity": {
      "value": 65,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "referenceRange": [
      {
        "text": "normal"
      }
    ]
  ]
}

```

### [base]/Observation?patient=[reference]&code=[system][value]

```

[base]/Observation?patient=[reference]&code=[system] | [value]
GET /Observation?patient=1061418&code=http://terminology.hl7.org/CodeSystem/observation-category|59576-1

{
  "resourceType": "Bundle",
  "id": "8a25c7b5-f25b-48f0-b9e0-24bfc9380e03",
  "meta": {
    "lastUpdated": "2021-01-26T21:36:34.824+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?code=http%3A%2F%2Fterminology.hl7.org%2FCodeSystem%2Fobservation-category%7C59576-1&patient=1061418"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Observation/d6131b11-1506-43f2-8579-b3ef76f2a266",
      "resource": {
        "resourceType": "Observation",
        "id": "d6131b11-1506-43f2-8579-b3ef76f2a266",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-02T00:14:41.672+00:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ]
        }
      }
    }
  ]
}

```

```

    "tag": [
      {
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "67717d50-e6c0-46cf-922f-8e6541f8d076\t\t\t1"
      }
    ],
    "identifier": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/observation-category",
        "value": "59576-1"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "d6131b11-1506-43f2-8579-b3ef76f2a266"
      }
    ],
    "status": "registered",
    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "vital-signs",
            "display": "Vital Signs"
          }
        ]
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "59576-1",
          "display": "Body mass index (BMI) [Percentile] Per age and gender"
        }
      ],
      "text": "Pediatric bmi for age"
    },
    "subject": {
      "reference": "Patient/1061418"
    },
    "effectiveDateTime": "2013-03-11T10:28:00+01:00",
    "valueQuantity": {
      "value": 65,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "referenceRange": [
      {
        "text": "normal"
      }
    ]
  ]
}

```

[\[base\]/Observation?patient=\[reference\]&category=\[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs&date={gt|lt|ge|le}](#)

[\[base\]/Observation?patient=\[reference\]&category=\[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs&date={gt|lt|ge|le}](#)

```

GET /Observation?patient=1061418&category=http://terminology.hl7.org/CodeSystem/observation-
category|vital-signs&date=ge2013-03-11

{
  "resourceType": "Bundle",
  "id": "be0b91e3-8e83-4623-ab7a-dd151a5bc726",
  "meta": {
    "lastUpdated": "2021-01-26T21:39:44.318+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%
2FCodeSystem%2Fobservation-category%7Cvital-signs&patient=1061418"
    },
    {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=3a28e947-dcb3-57d7-9672-
dd742d762cc3&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Observation/0183ffb9-4a86-4840-81c2-51424b3420ac",
      "resource": {
        "resourceType": "Observation",
        "id": "0183ffb9-4a86-4840-81c2-51424b3420ac",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-01T08:47:43.984+00:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "4be85f75-8b08-4e24-aa6a-0be2bc4e612b\t\t\t1"
            }
          ]
        },
        "identifier": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "value": "59576-9"
          },
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "0183ffb9-4a86-4840-81c2-51424b3420ac"
          }
        ],
        "status": "registered",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-category",
                "code": "vital-signs",
                "display": "Vital Signs"
              }
            ]
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/observation-category",
              "code": "59576-9",

```

```

        "display": "Body mass index (BMI) [Percentile] Per age and gender"
      },
    ],
    "text": "Pediatric bmi for age"
  },
  "subject": {
    "reference": "Patient/1061418"
  },
  "effectiveDateTime": "2013-03-11T10:28:00+01:00",
  "valueQuantity": {
    "value": 65,
    "unit": "%",
    "system": "http://unitsofmeasure.org",
    "code": "%"
  },
  "referenceRange": [
    {
      "text": "normal"
    }
  ]
},
{
  "fullUrl": "https://<datahub_server>/Observation/781daefb-ec7a-4624-b92a-cc047928ca21",
  "resource": {
    "resourceType": "Observation",
    "id": "781daefb-ec7a-4624-b92a-cc047928ca21",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-01T08:47:43.999+00:00",
      "profile": [
        "http://tzf.com/fhir/StructureDefinition/Observation"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "3453c3e6-a839-4b10-aa19-bbf72cbfd6ff\t\t1"
        }
      ]
    },
    "identifier": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/observation-category",
        "value": "59576-9"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "781daefb-ec7a-4624-b92a-cc047928ca21"
      }
    ],
    "status": "registered",
    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "vital-signs",
            "display": "Vital Signs"
          }
        ]
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "59576-9",
          "display": "Body mass index (BMI) [Percentile] Per age and gender"
        }
      ]
    }
  }
}

```

```

    ],
    "text": "Pediatric bmi for age"
  },
  "subject": {
    "reference": "Patient/1061418"
  },
  "effectiveDateTime": "2013-03-11T10:28:00+01:00",
  "valueQuantity": {
    "value": 65,
    "unit": "%",
    "system": "http://unitsofmeasure.org",
    "code": "%"
  },
  "referenceRange": [
    {
      "text": "normal"
    }
  ]
},
{
  "fullUrl": "https://<datahub_server>/Observation/d6131b11-1506-43f2-8579-b3ef76f2a266",
  "resource": {
    "resourceType": "Observation",
    "id": "d6131b11-1506-43f2-8579-b3ef76f2a266",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-02T00:14:41.672+00:00",
      "profile": [
        "http://tzf.com/fhir/StructureDefinition/Observation"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "67717d50-e6c0-46cf-922f-8e6541f8d076\t\t\t1"
        }
      ]
    },
    "identifier": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/observation-category",
        "value": "59576-1"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "d6131b11-1506-43f2-8579-b3ef76f2a266"
      }
    ],
    "status": "registered",
    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "vital-signs",
            "display": "Vital Signs"
          }
        ]
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "59576-1",
          "display": "Body mass index (BMI) [Percentile] Per age and gender"
        }
      ],
      "text": "Pediatric bmi for age"
    }
  }
}

```

```
    },
    "subject": {
      "reference": "Patient/1061418"
    },
    "effectiveDateTime": "2013-03-11T10:28:00+01:00",
    "valueQuantity": {
      "value": 65,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "referenceRange": [
      {
        "text": "normal"
      }
    ]
  }
}
```

---

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# Observation - Pediatric Weight for Height Observation

## Use Case

A member accesses a mobile application to see how their baby is growing by looking at their weight and comparing it against the averages for their height and age. The application UI calls an external endpoint which returns the information in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]
- GET [base]/Observation?patient=[reference]&code=[system]][value]
- GET [base]/DiagnosticReport?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs&date={gt|lt|ge|le}]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Pediatric Weight for Height Observation Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.

500

Internal server error.

## Sample Requests and Responses

[base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]

```
[base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]
```

```
GET /Observation?patient=pat1&category=http://terminology.hl7.org/CodeSystem/observation-category|vital-signs
```

```
{
  "resourceType": "Bundle",
  "id": "0763c507-3c60-4f9f-bf95-9b626a5afbe9",
  "meta": {
    "lastUpdated": "2021-01-26T21:49:16.474+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%2FCodeSystem%2Fobservation-category%7Cvital-signs&patient=pat1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Observation/4e425466-5d90-a9a3-8caa-53216d5430b7",
      "resource": {
        "resourceType": "Observation",
        "id": "4e425466-5d90-a9a3-8caa-53216d5430b7",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-12-24T06:00:47.360+00:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ]
        },
        "identifier": [
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "4e425466-5d90-a9a3-8caa-53216d5430b7"
          }
        ],
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-category",
                "code": "vital-signs",
                "display": "vital-signs"
              }
            ]
          }
        ],
        "code": {
          "coding": [
            {

```



```

      "system": "http://loinc.org",
      "code": "77606-2",
      "display": "Weight-for-length Per age and sex"
    },
    ],
    "text": "Weight-for-length Per age and sex"
  },
  "subject": {
    "reference": "Patient/pat1"
  },
  "encounter": {
    "reference": "Encounter/65abf8dc-d463-e590-71e7-dea000842f94"
  },
  "effectiveDateTime": "1940-09-05T19:33:18-04:00",
  "issued": "1940-09-05T19:33:18.715-04:00",
  "valueQuantity": {
    "value": 7.5192,
    "unit": "%",
    "system": "http://unitsofmeasure.org",
    "code": "%"
  }
}
]
}
}
}
}

```

### [base]/Observation?patient=[reference]&code=[system][value]

```

[base]/Observation?patient=[reference]&code=[system] | [value]

GET /Observation?patient=1061418&code=http://loinc.org|77606-2

{
  "resourceType": "Bundle",
  "id": "0763c507-3c60-4f9f-bf95-9b626a5afbe9",
  "meta": {
    "lastUpdated": "2021-01-26T21:49:16.474+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%2FCodeSystem%2Fobservation-category%7Cvital-signs&patient=pat1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Observation/4e425466-5d90-a9a3-8caa-53216d5430b7",
      "resource": {
        "resourceType": "Observation",
        "id": "4e425466-5d90-a9a3-8caa-53216d5430b7",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-12-24T06:00:47.360+00:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ]
        },
        "identifier": [
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "4e425466-5d90-a9a3-8caa-53216d5430b7"
          }
        ],
        "status": "final",

```

```

    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "vital-signs",
            "display": "vital-signs"
          }
        ]
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "77606-2",
          "display": "Weight-for-length Per age and sex"
        }
      ],
      "text": "Weight-for-length Per age and sex"
    },
    "subject": {
      "reference": "Patient/pat1"
    },
    "encounter": {
      "reference": "Encounter/65abf8dc-d463-e590-71e7-dea000842f94"
    },
    "effectiveDateTime": "1940-09-05T19:33:18-04:00",
    "issued": "1940-09-05T19:33:18.715-04:00",
    "valueQuantity": {
      "value": 7.5192,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    }
  }
}

```

[\[base\]/DiagnosticReport?patient=\[reference\]&category=\[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs&date={gt|lt|ge|le}\]](#)

```

[base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-
category|vital-signs&date={gt|lt|ge|le}]

```

```

GET /Observation?patient=pat1&category=http://terminology.hl7.org/CodeSystem/observation-category|vital-
signs&date=ge1940-09-05

```

```

{
  "resourceType": "Bundle",
  "id": "0763c507-3c60-4f9f-bf95-9b626a5afbe9",
  "meta": {
    "lastUpdated": "2021-01-26T21:49:16.474+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%
2FCodeSystem%2Fobservation-category%7Cvital-signs&patient=pat1"
    }
  ],
  "entry": [
    {

```

```

"fullUrl": "https://<datahub_server>/Observation/4e425466-5d90-a9a3-8caa-53216d5430b7",
"resource": {
  "resourceType": "Observation",
  "id": "4e425466-5d90-a9a3-8caa-53216d5430b7",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2020-12-24T06:00:47.360+00:00",
    "profile": [
      "http://tzf.com/fhir/StructureDefinition/Observation"
    ]
  },
  "identifier": [
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "4e425466-5d90-a9a3-8caa-53216d5430b7"
    }
  ],
  "status": "final",
  "category": [
    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "vital-signs",
          "display": "vital-signs"
        }
      ]
    }
  ],
  "code": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "77606-2",
        "display": "Weight-for-length Per age and sex"
      }
    ],
    "text": "Weight-for-length Per age and sex"
  },
  "subject": {
    "reference": "Patient/pat1"
  },
  "encounter": {
    "reference": "Encounter/65abf8dc-d463-e590-71e7-dea000842f94"
  },
  "effectiveDateTime": "1940-09-05T19:33:18-04:00",
  "issued": "1940-09-05T19:33:18.715-04:00",
  "valueQuantity": {
    "value": 7.5192,
    "unit": "%",
    "system": "http://unitsofmeasure.org",
    "code": "%"
  }
}

```

---

## Legal Information:

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# Observation - Pulse Oximetry

## Use Case

A member has their blood oxygen saturation levels regularly monitored by a provider using a pulse oximetry device. The member uses an application to retrieve information on their pulse oximetry readings. The application UI calls an external endpoint which returns the pulse oximetry information associated with the member in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]
- GET [base]/Observation?patient=[reference]&code=[system]][value]
- GET [base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]&date={gt|lt|ge|le}

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Pulse Oximetry Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

[base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]

```
[base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]
```

```
GET /Observation?patient=07710040201&category=http://terminology.hl7.org/CodeSystem/observation-category|vital-signs
```

```
{
  "resourceType": "Bundle",
  "id": "b5c7f344-2dbe-4989-a6aa-2e337a0ec9fb",
  "meta": {
    "lastUpdated": "2021-01-26T21:10:43.765+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%2FCodeSystem%2Fobservation-category%7Cvital-signs&patient=07710040201"
    },
    {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=240a098e-4d32-59fd-8db2-3425c1ae6cae&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Observation/0306b621-2177-43ef-842e-236c563ed096",
      "resource": {
        "resourceType": "Observation",
        "id": "0306b621-2177-43ef-842e-236c563ed096",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-01T06:50:46.553+00:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "562d43d6-bbf0-4466-9517-f6c0ef2a8aa5\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: satO2-fiO2</p><p><b>identifier</b>: o1223435-10</p><p><b>status</b>: final</p><p><b>category</b>: Vital Signs <span style='background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org/CodeSystem/observation-category code 'vital-signs' = 'Vital Signs', given as 'Vital Signs'})</span></p><p><b>code</b>: Oxygen saturation in Arterial blood <span style='background: LightGoldenRodYellow'>(Details : {LOINC code '2708-6' = 'Oxygen saturation in Arterial blood', given as 'Oxygen saturation in Arterial blood'}; {LOINC code '59408-5' = 'Oxygen saturation in Arterial blood by Pulse oximetry', given as 'Oxygen saturation in Arterial blood by Pulse oximetry'}; {urn:iso:std:iso:11073:10101 code '150456' = '150456', given as 'MDC_PULS_OXIM_SAT_O2'})</span></p><p><b>subject</b>: <a href='\"
Patient-example.html\">Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy V. Shaw ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 2007-02-20</a></p><p><b>effective</b>: 05/12/2014 7:30:10 PM</p><p><b>value</b>: 95 %<span style='background: LightGoldenRodYellow'> (Details: UCUM code % = '%')</span></p><p><b>interpretation</b>: Normal (applies to non-numeric results) <span style='background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org
```

```

/CodeSystem/v3-ObservationInterpretation code 'N' = 'Normal', given as 'Normal'})</span></p><p><b>device<
/b>: Acme Pulse Oximeter 2000</p><h3>ReferenceRanges</h3><table class=\"grid\"><tr><td>-</td><td><b>Low</b><
/b></td><td><b>High</b></td></tr><tr><td>*</td><td>99 %<span style=\"background: LightGoldenRodYellow\">
(Details: UCUM code % = '%')</span></td><td>99 %<span style=\"background: LightGoldenRodYellow\"> (Details:
UCUM code % = '%')</span></td></tr></table><h3>Components</h3><table class=\"grid\"><tr><td>-<
/b></td><td><b>Code</b></td><td><b>Value[x]</b></td></tr><tr><td>*</td><td>Inhaled oxygen flow rate <span
style=\"background: LightGoldenRodYellow\">(Details : {LOINC code '3151-8' = 'Inhaled oxygen flow rate',
given as 'Inhaled oxygen flow rate'})</span></td><td>6 liters/min<span style=\"background:
LightGoldenRodYellow\"> (Details: UCUM code l/min = 'l/min')</span></td></tr></table></div>
    },
    "identifier": [
      {
        "system": "http://goodcare.org/observation/id",
        "value": "o1223435-10"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "0306b621-2177-43ef-842e-236c563ed096"
      }
    ],
    "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": "http://loinc.org",
          "code": "59408-5",
          "display": "Oxygen saturation in Arterial blood by Pulse oximetry"
        },
        {
          "system": "urn:iso:std:iso:11073:10101",
          "code": "150456",
          "display": "MDC_PULS_OXIM_SAT_O2"
        }
      ]
    },
    "subject": {
      "reference": "Patient/07710040201"
    },
    "effectiveDateTime": "2014-12-05T09:30:10+01:00",
    "valueQuantity": {
      "value": 95,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "interpretation": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
            "code": "N",
            "display": "Normal"
          }
        ]
      }
    ]
  }
}

```

```

    },
    "text": "Normal (applies to non-numeric results)"
  },
  "device": {
    "display": "Acme Pulse Oximeter 2000"
  },
  "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"
      }
    }
  ],
  "fullUrl": "https://<datahub_server>/Observation/41fdb9a0-d5ef-49ef-8e8f-f894a353ba95",
  "resource": {
    "resourceType": "Observation",
    "id": "41fdb9a0-d5ef-49ef-8e8f-f894a353ba95",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-01T06:50:46.569+00:00",
      "profile": [
        "http://tzf.com/fhir/StructureDefinition/Observation"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "1f9ba91f-f374-4c1a-96a6-df260fae6474\t\t\t1"
        }
      ]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: sat02-fi02</p><p><b>identifier</b>: o1223435-10</p><p><b>status</b>: final<
/p><p><b>category</b>: Vital Signs <span style='background: LightGoldenRodYellow'>(Details :
[http://terminology.hl7.org/CodeSystem/observation-category code 'vital-signs' = 'Vital Signs', given as

```



```

'Vital Signs'})</span></p><p><b>code</b>: Oxygen saturation in Arterial blood <span style=\"background:
LightGoldenRodYellow\">(Details : {LOINC code '2708-6' = 'Oxygen saturation in Arterial blood', given as
'Oxygen saturation in Arterial blood'}; {LOINC code '59408-5' = 'Oxygen saturation in Arterial blood by
Pulse oximetry', given as 'Oxygen saturation in Arterial blood by Pulse oximetry'}; {urn:iso:std:iso:11073:
10101 code '150456' = '150456', given as 'MDC_PULS_OXIM_SAT_O2'})</span></p><p><b>subject</b>: <a href=\"
Patient-example.html\">Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy
V. Shaw ; ph: 555-555-5555(HOME), amy.shaw@example.com; gender: female; birthDate: 2007-02-20</a><
/p><p><b>effective</b>: 05/12/2014 7:30:10 PM</p><p><b>value</b>: 95 %<span style=\"background:
LightGoldenRodYellow\">(Details: UCUM code % = '%')</span></p><p><b>interpretation</b>: Normal (applies to
non-numeric results) <span style=\"background: LightGoldenRodYellow\">(Details : {http://terminology.hl7.org
/CodeSystem/v3-ObservationInterpretation code 'N' = 'Normal', given as 'Normal'})</span></p><p><b>device<
/b>: Acme Pulse Oximeter 2000</p><h3>ReferenceRanges</h3><table class=\"grid\"><tr><td>-</td><td><b>Low</b><
/b></td><td><b>High</b></td></tr><tr><td>*</td><td>90 %<span style=\"background: LightGoldenRodYellow\">
(Details: UCUM code % = '%')</span></td><td>99 %<span style=\"background: LightGoldenRodYellow\">(Details:
UCUM code % = '%')</span></td></tr></table><h3>Components</h3><table class=\"grid\"><tr><td>-<
/b></td><td><b>Code</b></td><td><b>Value[x]</b></td></tr><tr><td>*</td><td>Inhaled oxygen flow rate <span
style=\"background: LightGoldenRodYellow\">(Details : {LOINC code '3151-8' = 'Inhaled oxygen flow rate',
given as 'Inhaled oxygen flow rate'})</span></td><td>6 liters/min<span style=\"background:
LightGoldenRodYellow\">(Details: UCUM code l/min = 'l/min')</span></td></tr></table></div>
  },
  "identifier": [
    {
      "system": "http://goodcare.org/observation/id",
      "value": "o1223435-10"
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "41fdb9a0-d5ef-49ef-8e8f-f894a353ba95"
    }
  ],
  "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": "http://loinc.org",
        "code": "59408-5",
        "display": "Oxygen saturation in Arterial blood by Pulse oximetry"
      },
      {
        "system": "urn:iso:std:iso:11073:10101",
        "code": "150456",
        "display": "MDC_PULS_OXIM_SAT_O2"
      }
    ]
  },
  "subject": {
    "reference": "Patient/07710040201"
  },
  "effectiveDateTime": "2014-12-05T09:30:10+01:00",
  "performer": [
    {
      "reference": "Organization/53453454",
      "display": "AUMC"
    }
  ]
}

```

```

    },
    "valueQuantity": {
      "value": 95,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "interpretation": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
            "code": "N",
            "display": "Normal"
          }
        ],
        "text": "Normal (applies to non-numeric results)"
      }
    ],
    "device": {
      "display": "Acme Pulse Oximeter 2000"
    },
    "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"
        }
      }
    ]
  },
  {
    "fullUrl": "https://<datahub_server>/Observation/bodytempP1",
    "resource": {
      "resourceType": "Observation",
      "id": "bodytempP1",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-21T16:01:43.864+00:00",
        "profile": [

```

```

        "http://tzf.com/fhir/StructureDefinition/Observation"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "13182d5d-a006-46cd-96bc-a749f7d71ff5\t\t\t1"
        }
      ]
    },
    "identifier": [
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "bodytempP1"
      }
    ],
    "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/07710040201",
      "display": "Infant Example"
    },
    "encounter": {
      "display": "GP Visit"
    },
    "effectiveDateTime": "2020-07-02",
    "valueQuantity": {
      "value": 92.53,
      "unit": "Cel",
      "system": "http://unitsofmeasure.org",
      "code": "Cel"
    },
    "note": [
      {
        "text": "WHO Males, 0-2 years Chart"
      }
    ]
  ]
}

```

[\[base\]/Observation?patient=\[reference\]&code=\[system\]\]\[value\]](#)

[base]/Observation?patient=[reference]&code=[system] | [value]

```
GET /Observation?patient=07710040201&code=http://loinc.org|2708-6
```

```
{
  "resourceType": "Bundle",
  "id": "870889d7-16b3-410f-83d8-edd3e945a3bb",
  "meta": {
    "lastUpdated": "2021-01-26T21:08:05.509+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?code=http%3A%2F%2Floinc.org%7C2708-6&patient=07710040201"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Observation/0306b621-2177-43ef-842e-236c563ed096",
      "resource": {
        "resourceType": "Observation",
        "id": "0306b621-2177-43ef-842e-236c563ed096",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-01T06:50:46.553+00:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "562d43d6-bbf0-4466-9517-f6c0ef2a8aa5\t\tt1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: satO2-fiO2</p><p><b>identifier</b>: o1223435-10</p><p><b>status</b>: final</p><p><b>category</b>: Vital Signs <span style='background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org/CodeSystem/observation-category code 'vital-signs' = 'Vital Signs', given as 'Vital Signs'})</span></p><p><b>code</b>: Oxygen saturation in Arterial blood <span style='background: LightGoldenRodYellow'>(Details : {LOINC code '2708-6' = 'Oxygen saturation in Arterial blood', given as 'Oxygen saturation in Arterial blood'}; {LOINC code '59408-5' = 'Oxygen saturation in Arterial blood by Pulse oximetry', given as 'Oxygen saturation in Arterial blood by Pulse oximetry'}; {urn:iso:std:iso:11073:10101 code '150456' = '150456', given as 'MDC_PULS_OXIM_SAT_O2'})</span></p><p><b>subject</b>: <a href='\"
Patient-example.html\">Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy V. Shaw ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 2007-02-20</a></p><p><b>effective</b>: 05/12/2014 7:30:10 PM</p><p><b>value</b>: 95 %<span style='background: LightGoldenRodYellow'>(Details: UCUM code % = '%')</span></p><p><b>interpretation</b>: Normal (applies to non-numeric results) <span style='background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org/CodeSystem/v3-ObservationInterpretation code 'N' = 'Normal', given as 'Normal'})</span></p><p><b>device</b>: Acme Pulse Oximeter 2000</p><h3>ReferenceRanges</h3><table class='\"grid\"><tr><td></td><td><b>Low</b></td><td><b>High</b></td></tr><tr><td>*</td><td>90 %<span style='background: LightGoldenRodYellow'>(Details: UCUM code % = '%')</span></td><td>99 %<span style='background: LightGoldenRodYellow'>(Details: UCUM code % = '%')</span></td></tr></table><h3>Components</h3><table class='\"grid\"><tr><td></td><td><b>Code</b></td><td><b>Value[x]</b></td></tr><tr><td>*</td><td>Inhaled oxygen flow rate <span style='background: LightGoldenRodYellow'>(Details : {LOINC code '3151-8' = 'Inhaled oxygen flow rate', given as 'Inhaled oxygen flow rate'})</span></td><td>6 liters/min<span style='background: LightGoldenRodYellow'>(Details: UCUM code l/min = 'l/min')</span></td></tr></table></div>"
        },
        "identifier": [
          {
            "system": "http://goodcare.org/observation/id",
            "value": "o1223435-10"
          },
          {
            "use": "official",

```

```

        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "0306b621-2177-43ef-842e-236c563ed096"
      }
    ],
    "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": "http://loinc.org",
          "code": "59408-5",
          "display": "Oxygen saturation in Arterial blood by Pulse oximetry"
        },
        {
          "system": "urn:iso:std:iso:11073:10101",
          "code": "150456",
          "display": "MDC_PULS_OXIM_SAT_O2"
        }
      ]
    },
    "subject": {
      "reference": "Patient/07710040201"
    },
    "effectiveDateTime": "2014-12-05T09:30:10+01:00",
    "valueQuantity": {
      "value": 95,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "interpretation": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
            "code": "N",
            "display": "Normal"
          }
        ],
        "text": "Normal (applies to non-numeric results)"
      }
    ],
    "device": {
      "display": "Acme Pulse Oximeter 2000"
    },
    "referenceRange": [
      {
        "low": {
          "value": 90,
          "unit": "%",
          "system": "http://unitsofmeasure.org",
          "code": "%"
        },
        "high": {

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      "value": 99,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    }
  ],
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    {
      "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"
      }
    }
  ],
  "fullUrl": "https://<datahub_server>/Observation/41fdb9a0-d5ef-49ef-8e8f-f894a353ba95",
  "resource": {
    "resourceType": "Observation",
    "id": "41fdb9a0-d5ef-49ef-8e8f-f894a353ba95",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-01T06:50:46.569+00:00",
      "profile": [
        "http://tzf.com/fhir/StructureDefinition/Observation"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "1f9ba91f-f374-4c1a-96a6-df260fae6474\t\t\t1"
        }
      ]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: satO2-fiO2</p><p><b>identifier</b>: o1223435-10</p><p><b>status</b>: final<
/p><p><b>category</b>: Vital Signs <span style='background: LightGoldenRodYellow'>(Details :
{http://terminology.hl7.org/CodeSystem/observation-category code 'vital-signs' = 'Vital Signs', given as
'Vital Signs'})</span></p><p><b>code</b>: Oxygen saturation in Arterial blood <span style='background:
LightGoldenRodYellow'>(Details : {LOINC code '2708-6' = 'Oxygen saturation in Arterial blood', given as
'Oxygen saturation in Arterial blood'}; {LOINC code '59408-5' = 'Oxygen saturation in Arterial blood by
Pulse oximetry', given as 'Oxygen saturation in Arterial blood by Pulse oximetry'}; {urn:iso:std:iso:11073:
10101 code '150456' = '150456', given as 'MDC_PULS_OXIM_SAT_O2'})</span></p><p><b>subject</b>: <a href='\"
Patient-example.html\">Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy
V. Shaw ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 2007-02-20</a><
/p><p><b>effective</b>: 05/12/2014 7:30:10 PM</p><p><b>value</b>: 95 %<span style='background:
LightGoldenRodYellow'>(Details: UCUM code % = '%')</span></p><p><b>interpretation</b>: Normal (applies to
non-numeric results) <span style='background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org
/CodeSystem/v3-ObservationInterpretation code 'N' = 'Normal', given as 'Normal'})</span></p><p><b>device<
/b>: Acme Pulse Oximeter 2000</p><h3>ReferenceRanges</h3><table class='\"grid\"><tr><td></td><td><b>Low</b><
/td><td><b>High</b></td></tr><tr><td>*</td><td>90 %<span style='background: LightGoldenRodYellow'>
(Details: UCUM code % = '%')</span></td><td>99 %<span style='background: LightGoldenRodYellow'> (Details:
UCUM code % = '%')</span></td></tr></table><h3>Components</h3><table class='\"grid\"><tr><td><
/td><td><b>Code</b></td><td><b>Value[x]</b></td></tr><tr><td>*</td><td>Inhaled oxygen flow rate <span
style='background: LightGoldenRodYellow'>(Details : {LOINC code '3151-8' = 'Inhaled oxygen flow rate',

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given as 'Inhaled oxygen flow rate'})</span></td><td>6 liters/min<span style=\"background:
LightGoldenRodYellow\"> (Details: UCUM code l/min = 'l/min')</span></td></tr></table></div>
  },
  "identifier": [
    {
      "system": "http://goodcare.org/observation/id",
      "value": "o1223435-10"
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "41fdb9a0-d5ef-49ef-8e8f-f894a353ba95"
    }
  ],
  "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": "http://loinc.org",
        "code": "59408-5",
        "display": "Oxygen saturation in Arterial blood by Pulse oximetry"
      },
      {
        "system": "urn:iso:std:iso:11073:10101",
        "code": "150456",
        "display": "MDC_PULS_OXIM_SAT_O2"
      }
    ]
  },
  "subject": {
    "reference": "Patient/07710040201"
  },
  "effectiveDateTime": "2014-12-05T09:30:10+01:00",
  "performer": [
    {
      "reference": "Organization/53453454",
      "display": "AUMC"
    }
  ],
  "valueQuantity": {
    "value": 95,
    "unit": "%",
    "system": "http://unitsofmeasure.org",
    "code": "%"
  },
  "interpretation": [
    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
          "code": "N",
          "display": "Normal"
        }
      ]
    }
  ]
}

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    ],
    "text": "Normal (applies to non-numeric results)"
  }
],
"device": {
  "display": "Acme Pulse Oximeter 2000"
},
"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"
    }
  }
]
}

```

[\[base\]/Observation?patient=\[reference\]&category=\[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs&date={gt|lt|ge|le}\]](#)

```
GET /Observation?patient=07710040201&category=http://terminology.hl7.org/CodeSystem/observation-
category|vital-signs&date=ge2014-12-05
```

```

{
  "resourceType": "Bundle",
  "id": "4c2f34d7-d9ca-422f-9def-f869ecabe830",
  "meta": {
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  },
  "type": "searchset",
  "total": 3,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%

```



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2FCodeSystem%2Fobservation-category%7Cvital-signs&date=ge2014-12-05&patient=07710040201"
  },
  {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=6d31ef92-bc6f-51bc-9951-
d64b83386dcf&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
"entry": [
  {
    "fullUrl": "https://<datahub_server>/Observation/0306b621-2177-43ef-842e-236c563ed096",
    "resource": {
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      "id": "0306b621-2177-43ef-842e-236c563ed096",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-09-01T06:50:46.553+00:00",
        "profile": [
          "http://tzf.com/fhir/StructureDefinition/Observation"
        ],
        "tag": [
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            "code": "user-request-id",
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          }
        ]
      },
      "text": {
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        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: sat02-fi02</p><p><b>identifier</b>: o1223435-10</p><p><b>status</b>: final<
/p><p><b>category</b>: Vital Signs <span style='background: LightGoldenRodYellow'>(Details :
{http://terminology.hl7.org/CodeSystem/observation-category code 'vital-signs' = 'Vital Signs', given as
'Vital Signs'})</span></p><p><b>code</b>: Oxygen saturation in Arterial blood <span style='background:
LightGoldenRodYellow'>(Details : {LOINC code '2708-6' = 'Oxygen saturation in Arterial blood', given as
'Oxygen saturation in Arterial blood'}; {LOINC code '59408-5' = 'Oxygen saturation in Arterial blood by
Pulse oximetry', given as 'Oxygen saturation in Arterial blood by Pulse oximetry'}; {urn:iso:std:iso:11073:
10101 code '150456' = '150456', given as 'MDC_PULS_OXIM_SAT_O2'})</span></p><p><b>subject</b>: <a href='\"
Patient-example.html\">Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy
V. Shaw ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 2007-02-20</a><
/p><p><b>effective</b>: 05/12/2014 7:30:10 PM</p><p><b>value</b>: 95 %<span style='background:
LightGoldenRodYellow'>(Details: UCUM code % = '%')</span></p><p><b>interpretation</b>: Normal (applies to
non-numeric results) <span style='background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org
/CodeSystem/v3-ObservationInterpretation code 'N' = 'Normal', given as 'Normal'})</span></p><p><b>device<
/b>: Acme Pulse Oximeter 2000</p><h3>ReferenceRanges</h3><table class='grid'><tr><td>-</td><td><b>Low</b></td>
</tr><tr><td><b>High</b></td><tr><td>*</td><td>90 %<span style='background: LightGoldenRodYellow'>
(Details: UCUM code % = '%')</span></td><td>99 %<span style='background: LightGoldenRodYellow'> (Details:
UCUM code % = '%')</span></td></tr></table><h3>Components</h3><table class='grid'><tr><td>-<
/td><td><b>Code</b></td><td><b>Value[x]</b></td><tr><td>*</td><td>Inhaled oxygen flow rate <span
style='background: LightGoldenRodYellow'>(Details : {LOINC code '3151-8' = 'Inhaled oxygen flow rate',
given as 'Inhaled oxygen flow rate'})</span></td><td>6 liters/min<span style='background:
LightGoldenRodYellow'> (Details: UCUM code l/min = 'l/min')</span></td></tr></table></div>"
      },
      "identifier": [
        {
          "system": "http://goodcare.org/observation/id",
          "value": "o1223435-10"
        },
        {
          "use": "official",
          "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
          "value": "0306b621-2177-43ef-842e-236c563ed096"
        }
      ],
      "status": "final",
      "category": [
        {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/observation-category",

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        "display": "Vital Signs"
      }
    ],
    "text": "Vital Signs"
  }
],
"code": {
  "coding": [
    {
      "system": "http://loinc.org",
      "code": "2708-6",
      "display": "Oxygen saturation in Arterial blood"
    },
    {
      "system": "http://loinc.org",
      "code": "59408-5",
      "display": "Oxygen saturation in Arterial blood by Pulse oximetry"
    },
    {
      "system": "urn:iso:std:iso:11073:10101",
      "code": "150456",
      "display": "MDC_PULS_OXIM_SAT_O2"
    }
  ]
},
"subject": {
  "reference": "Patient/07710040201"
},
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"valueQuantity": {
  "value": 95,
  "unit": "%",
  "system": "http://unitsofmeasure.org",
  "code": "%"
},
"interpretation": [
  {
    "coding": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
        "code": "N",
        "display": "Normal"
      }
    ],
    "text": "Normal (applies to non-numeric results)"
  }
],
"device": {
  "display": "Acme Pulse Oximeter 2000"
},
"referenceRange": [
  {
    "low": {
      "value": 90,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "high": {
      "value": 99,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    }
  }
],
"component": [
  {
    "code": {

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      "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"
    }
  }
},
{
  "fullUrl": "https://<datahub_server>/Observation/41fdb9a0-d5ef-49ef-8e8f-f894a353ba95",
  "resource": {
    "resourceType": "Observation",
    "id": "41fdb9a0-d5ef-49ef-8e8f-f894a353ba95",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-01T06:50:46.569+00:00",
      "profile": [
        "http://tzf.com/fhir/StructureDefinition/Observation"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "1f9ba91f-f374-4c1a-96a6-df260fae6474\t\t\t1"
        }
      ]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: satO2-fiO2</p><p><b>identifier</b>: o1223435-10</p><p><b>status</b>: final<
/p><p><b>category</b>: Vital Signs <span style='background: LightGoldenRodYellow'>(Details :
{http://terminology.hl7.org/CodeSystem/observation-category code 'vital-signs' = 'Vital Signs', given as
'Vital Signs'})</span></p><p><b>code</b>: Oxygen saturation in Arterial blood <span style='background:
LightGoldenRodYellow'>(Details : {LOINC code '2708-6' = 'Oxygen saturation in Arterial blood', given as
'Oxygen saturation in Arterial blood'}; {LOINC code '59408-5' = 'Oxygen saturation in Arterial blood by
Pulse oximetry', given as 'Oxygen saturation in Arterial blood by Pulse oximetry'}; {urn:iso:std:iso:11073:
10101 code '150456' = '150456', given as 'MDC_PULS_OXIM_SAT_O2'})</span></p><p><b>subject</b>: <a href='\"
Patient-example.html\">Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy
V. Shaw ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 2007-02-20</a><
/p><p><b>effective</b>: 05/12/2014 7:30:10 PM</p><p><b>value</b>: 95 %<span style='background:
LightGoldenRodYellow'>(Details: UCUM code % = '%')</span></p><p><b>interpretation</b>: Normal (applies to
non-numeric results) <span style='background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org
/CodeSystem/v3-ObservationInterpretation code 'N' = 'Normal', given as 'Normal'})</span></p><p><b>device<
/b>: Acme Pulse Oximeter 2000</p><h3>ReferenceRanges</h3><table class='\"grid\"><tr><td></td><td><b>Low</b></td><td><b>High</b></td></tr><tr><td>*</td><td>90 %<span style='background: LightGoldenRodYellow'>
(Details: UCUM code % = '%')</span></td><td>99 %<span style='background: LightGoldenRodYellow'>(Details:
UCUM code % = '%')</span></td></tr></table><h3>Components</h3><table class='\"grid\"><tr><td></td><td><b>Code</b></td><td><b>Value[x]</b></td></tr><tr><td>*</td><td>Inhaled oxygen flow rate <span
style='background: LightGoldenRodYellow'>(Details : {LOINC code '3151-8' = 'Inhaled oxygen flow rate',
given as 'Inhaled oxygen flow rate'})</span></td><td>6 liters/min<span style='background:
LightGoldenRodYellow'>(Details: UCUM code l/min = 'l/min')</span></td></tr></table></div>"
    },
    "identifier": [
      {
        "system": "http://goodcare.org/observation/id",
        "value": "o1223435-10"
      }
    ],
    "use": "official",
  }
}

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        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "41fdb9a0-d5ef-49ef-8e8f-f894a353ba95"
      }
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    "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": "http://loinc.org",
          "code": "59408-5",
          "display": "Oxygen saturation in Arterial blood by Pulse oximetry"
        },
        {
          "system": "urn:iso:std:iso:11073:10101",
          "code": "150456",
          "display": "MDC_PULS_OXIM_SAT_O2"
        }
      ]
    },
    "subject": {
      "reference": "Patient/07710040201"
    },
    "effectiveDateTime": "2014-12-05T09:30:10+01:00",
    "performer": [
      {
        "reference": "Organization/53453454",
        "display": "AUMC"
      }
    ],
    "valueQuantity": {
      "value": 95,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "interpretation": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
            "code": "N",
            "display": "Normal"
          }
        ],
        "text": "Normal (applies to non-numeric results)"
      }
    ],
    "device": {
      "display": "Acme Pulse Oximeter 2000"
    },
    "referenceRange": [
      {
        "low": {

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        "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"
        }
      }
    ]
  },
  {
    "fullUrl": "https://<datahub_server>/Observation/bodytempP1",
    "resource": {
      "resourceType": "Observation",
      "id": "bodytempP1",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-21T16:01:43.864+00:00",
        "profile": [
          "http://tzf.com/fhir/StructureDefinition/Observation"
        ],
        "tag": [
          {
            "system": "tranzform-apim-request-ns",
            "code": "user-request-id",
            "display": "13182d5d-a006-46cd-96bc-a749f7d71ff5\t\t\t1"
          }
        ]
      },
      "identifier": [
        {
          "use": "official",
          "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
          "value": "bodytempP1"
        }
      ],
      "status": "final",
      "category": [
        {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/observation-category",
              "code": "vital-signs",
              "display": "Vital Signs"
            }
          ]
        }
      ]
    }
  ],

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```
        "text": "Vital Signs"
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "8310-5",
          "display": "Body temperature"
        }
      ],
      "text": "Body temperature"
    },
    "subject": {
      "reference": "Patient/07710040201",
      "display": "Infant Example"
    },
    "encounter": {
      "display": "GP Visit"
    },
    "effectiveDateTime": "2020-07-02",
    "valueQuantity": {
      "value": 92.53,
      "unit": "Cel",
      "system": "http://unitsofmeasure.org",
      "code": "Cel"
    },
    "note": [
      {
        "text": "WHO Males, 0-2 years Chart"
      }
    ]
  }
}
```

---

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# Observation - Smoking Status

## Use Case

A member uses a mobile application to retrieve information on whether they are currently smoking or have smoked in the past. The application UI calls an external endpoint which returns the smoking status associated with the member in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]
- GET [base]/Observation?patient=[reference]&code=[system]][value]
- GET [base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]&date={gt|lt|ge|le}

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Smoking Status Observation Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

[base]/Observation?patient=[reference]&code=[system][value]

```
[base]/Observation?patient=[reference]&code=[system][value]
```

```
GET /Observation?patient=07710040201&code=http://loinc.org|72166-2
```

```
{
  "resourceType": "Bundle",
  "id": "61268967-9e4e-468b-9928-63d09e608ce1",
  "meta": {
    "lastUpdated": "2021-01-26T21:04:19.899+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?code=http%3A%2F%2Floinc.org%7C72166-2&patient=07710040201"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Observation/11fef548-9dbf-49af-9927-1f23441923f7",
      "resource": {
        "resourceType": "Observation",
        "id": "11fef548-9dbf-49af-9927-1f23441923f7",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-01T07:07:43.183+00:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "6d02d420-0f66-433c-98f1-fa8775a8f8ad\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b></p><p><b>id</b>: some-day-smoker</p><p><b>meta</b>: </p><p><b>category</b>: <span title='Codes: {http://terminology.hl7.org/CodeSystem/observation-category social-history}'>Social History</span></p><p><b>code</b>: <span title='Codes: {http://loinc.org 72166-2}'>Tobacco smoking status</span></p><p><b>subject</b>: <a href='Patient-example.html'>Amy Shaw. Generated Summary: id: example; Medical Record Number: 1032702 (USUAL); active; Amy V. Shaw , Amy V. Baxter ; ph: 555-555-5555(HOME), amy.shaw@example.com; gender: female; birthDate: 1987-02-20</a></p><p><b>issued</b>: 18/03/2016 4:27:04 PM</p><p><b>value</b>: <span title='Codes: {http://snomed.info/sct 428041000124106}'>Current some day smoker</span></p></div>"
        },
        "identifier": [
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "11fef548-9dbf-49af-9927-1f23441923f7"
          }
        ],
        "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": "72166-2",
            "display": "Tobacco smoking status"
          }
        ],
        "text": "Tobacco smoking status"
      },
      "subject": {
        "reference": "Patient/07710040201",
        "display": "Amy Shaw"
      },
      "issued": "2016-03-18T05:27:04Z",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "http://snomed.info/sct",
            "code": "428041000124106"
          }
        ],
        "text": "Current some day smoker"
      }
    }
  ],
  {
    "fullUrl": "https://<datahub_server>/Observation/ceecf12-5e18-497f-b456-ed88ddf86cdd",
    "resource": {
      "resourceType": "Observation",
      "id": "ceecf12-5e18-497f-b456-ed88ddf86cdd",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-09-01T07:07:43.293+00:00",
        "profile": [
          "http://tzf.com/fhir/StructureDefinition/Observation"
        ],
        "tag": [
          {
            "system": "tranzform-apim-request-ns",
            "code": "user-request-id",
            "display": "6d02d420-0f66-433c-98f1-fa8775a8f8ad\t\t\t1"
          }
        ]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b></p><p><b>id</b>: some-day-smoker</p><p><b>meta</b>: </p><p><b>category</b>: <span title='Codes: {http://terminology.hl7.org/CodeSystem/observation-category social-history}'>Social History</span></p><p><b>code</b>: <span title='Codes: {http://loinc.org 72166-2}'>Tobacco smoking status</span></p><p><b>subject</b>: <a href='Patient-example.html'>Amy Shaw. Generated Summary: id: example; Medical Record Number: 1032702 (USUAL); active; Amy V. Shaw , Amy V. Baxter ; ph: 555-555-5555 (HOME), amy.shaw@example.com; gender: female; birthDate: 1987-02-20</a></p><p><b>issued</b>: 18/03/2016 4:27:04 PM</p><p><b>value</b>: <span title='Codes: {http://snomed.info/sct 428041000124106}'>Current some day smoker</span></p></div>"
      },
      "identifier": [
        {
          "use": "official",
          "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",

```

```

        "value": "ceecf12-5e18-497f-b456-ed88ddf86cdd"
      }
    ],
    "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": "72166-2",
          "display": "Tobacco smoking status"
        }
      ],
      "text": "Tobacco smoking status"
    },
    "subject": {
      "reference": "Patient/07710040201",
      "display": "Amy Shaw"
    },
    "issued": "2016-03-18T05:27:04Z",
    "valueCodeableConcept": {
      "coding": [
        {
          "system": "http://snomed.info/sct",
          "code": "428041000124106"
        }
      ],
      "text": "Current some day smoker"
    }
  }
}

```

[\[base\]/Observation?patient=\[reference\]&category=\[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs&date={gt|lt|ge|le}\]](#)

```

GET /Observation?patient=07710040201&category=http://terminology.hl7.org/CodeSystem/observation-
category|vital-signs&date=ge2014-12-05

{
  "resourceType": "Bundle",
  "id": "4c2f34d7-d9ca-422f-9def-f869ecabe830",
  "meta": {
    "lastUpdated": "2021-01-26T21:15:47.399+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Observation?category=http%3A%2F%2Fterminology.hl7.org%
2FCodeSystem%2Fobservation-category%7Cvital-signs&date=ge2014-12-05&patient=07710040201"
    },
    {
      "relation": "next",

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    "url": "https://<datahub_server>?_getpages=6d31ef92-bc6f-51bc-9951-
d64b83386dcf&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  },
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Observation/0306b621-2177-43ef-842e-236c563ed096",
      "resource": {
        "resourceType": "Observation",
        "id": "0306b621-2177-43ef-842e-236c563ed096",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-01T06:50:46.553+00:00",
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "562d43d6-bbf0-4466-9517-f6c0ef2a8aa5\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: sat02-fi02</p><p><b>identifier</b>: o1223435-10</p><p><b>status</b>: final<
/p><p><b>category</b>: Vital Signs <span style='background: LightGoldenRodYellow'>(Details :
{http://terminology.hl7.org/CodeSystem/observation-category code 'vital-signs' = 'Vital Signs', given as
'Vital Signs'})</span></p><p><b>code</b>: Oxygen saturation in Arterial blood <span style='background:
LightGoldenRodYellow'>(Details : {LOINC code '2708-6' = 'Oxygen saturation in Arterial blood', given as
'Oxygen saturation in Arterial blood'}; {LOINC code '59408-5' = 'Oxygen saturation in Arterial blood by
Pulse oximetry', given as 'Oxygen saturation in Arterial blood by Pulse oximetry'}; {urn:iso:std:iso:11073:
10101 code '150456' = '150456', given as 'MDC_PULS_OXIM_SAT_O2'})</span></p><p><b>subject</b>: <a href='\"
Patient-example.html\">Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy
V. Shaw ; ph: 555-555-5555(HOME), amy.shaw@example.com; gender: female; birthDate: 2007-02-20</a><
/p><p><b>effective</b>: 05/12/2014 7:30:10 PM</p><p><b>value</b>: 95 %<span style='background:
LightGoldenRodYellow'>(Details: UCUM code % = '%')</span></p><p><b>interpretation</b>: Normal (applies to
non-numeric results) <span style='background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org
/CodeSystem/v3-ObservationInterpretation code 'N' = 'Normal', given as 'Normal'})</span></p><p><b>device</
b>: Acme Pulse Oximeter 2000</p><h3>ReferenceRanges</h3><table class='\"grid\"><tr><td></td><td><b>Low</b></td><td><b>High</b></td></tr><tr><td>*</td><td>90 %<span style='background: LightGoldenRodYellow'>
(Details: UCUM code % = '%')</span></td><td>99 %<span style='background: LightGoldenRodYellow'>(Details:
UCUM code % = '%')</span></td></tr></table><h3>Components</h3><table class='\"grid\"><tr><td><
/td><td><b>Code</b></td><td><b>Value[x]</b></td></tr><tr><td>*</td><td>Inhaled oxygen flow rate <span
style='background: LightGoldenRodYellow'>(Details : {LOINC code '3151-8' = 'Inhaled oxygen flow rate',
given as 'Inhaled oxygen flow rate'})</span></td><td>6 liters/min<span style='background:
LightGoldenRodYellow'>(Details: UCUM code l/min = 'l/min')</span></td></tr></table></div>
          },
          "identifier": [
            {
              "system": "http://goodcare.org/observation/id",
              "value": "o1223435-10"
            },
            {
              "use": "official",
              "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
              "value": "0306b621-2177-43ef-842e-236c563ed096"
            }
          ],
          "status": "final",
          "category": [
            {
              "coding": [
                {
                  "system": "http://terminology.hl7.org/CodeSystem/observation-category",
                  "code": "vital-signs",
                  "display": "Vital Signs"
                }
              ]
            }
          ],
        }
      }
    ],
  ],

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        "text": "Vital Signs"
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "2708-6",
          "display": "Oxygen saturation in Arterial blood"
        },
        {
          "system": "http://loinc.org",
          "code": "59408-5",
          "display": "Oxygen saturation in Arterial blood by Pulse oximetry"
        },
        {
          "system": "urn:iso:std:iso:11073:10101",
          "code": "150456",
          "display": "MDC_PULS_OXIM_SAT_O2"
        }
      ]
    },
    "subject": {
      "reference": "Patient/07710040201"
    },
    "effectiveDateTime": "2014-12-05T09:30:10+01:00",
    "valueQuantity": {
      "value": 95,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "interpretation": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
            "code": "N",
            "display": "Normal"
          }
        ],
        "text": "Normal (applies to non-numeric results)"
      }
    ],
    "device": {
      "display": "Acme Pulse Oximeter 2000"
    },
    "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"
    }
  ],
},
{
  "fullUrl": "https://datahub_server/Observation/41fdb9a0-d5ef-49ef-8e8f-f894a353ba95",
  "resource": {
    "resourceType": "Observation",
    "id": "41fdb9a0-d5ef-49ef-8e8f-f894a353ba95",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-01T06:50:46.569+00:00",
      "profile": [
        "http://tzf.com/fhir/StructureDefinition/Observation"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "1f9ba91f-f374-4c1a-96a6-df260fae6474\t\t\t1"
        }
      ]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: sat02-fi02</p><p><b>identifier</b>: o1223435-10</p><p><b>status</b>: final<
/p><p><b>category</b>: Vital Signs <span style='background: LightGoldenRodYellow'>(Details :
{http://terminology.hl7.org/CodeSystem/observation-category code 'vital-signs' = 'Vital Signs', given as
'Vital Signs'})</span></p><p><b>code</b>: Oxygen saturation in Arterial blood <span style='background:
LightGoldenRodYellow'>(Details : {LOINC code '2708-6' = 'Oxygen saturation in Arterial blood', given as
'Oxygen saturation in Arterial blood'}; {LOINC code '59408-5' = 'Oxygen saturation in Arterial blood by
Pulse oximetry', given as 'Oxygen saturation in Arterial blood by Pulse oximetry'}; {urn:iso:std:iso:11073:
10101 code '150456' = '150456', given as 'MDC_PULS_OXIM_SAT_O2'})</span></p><p><b>subject</b>: <a href='\"
Patient-example.html\">Generated Summary: id: example; Medical Record Number = 1032702 (USUAL); active; Amy
V. Shaw ; ph: 555-555-5555(HOME), amy.shaw@example.com; gender: female; birthDate: 2007-02-20</a><
/p><p><b>effective</b>: 05/12/2014 7:30:10 PM</p><p><b>value</b>: 95 %<span style='background:
LightGoldenRodYellow'>(Details: UCUM code % = '%')</span></p><p><b>interpretation</b>: Normal (applies to
non-numeric results) <span style='background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org
/CodeSystem/v3-ObservationInterpretation code 'N' = 'Normal', given as 'Normal'})</span></p><p><b>device<
/b>: Acme Pulse Oximeter 2000</p><h3>ReferenceRanges</h3><table class='\"grid\"><tr><td></td><td><b>Low</b><
/td><td><b>High</b></td></tr><tr><td>*</td><td>90 %<span style='background: LightGoldenRodYellow'>
(Details: UCUM code % = '%')</span></td><td>99 %<span style='background: LightGoldenRodYellow'> (Details:
UCUM code % = '%')</span></td></tr></table><h3>Components</h3><table class='\"grid\"><tr><td><-
/td><td><b>Code</b></td><td><b>Value[x]</b></td></tr><tr><td>*</td><td>Inhaled oxygen flow rate <span
style='background: LightGoldenRodYellow'>(Details : {LOINC code '3151-8' = 'Inhaled oxygen flow rate',
given as 'Inhaled oxygen flow rate'})</span></td><td>6 liters/min<span style='background:
LightGoldenRodYellow'> (Details: UCUM code l/min = 'l/min')</span></td></tr></table></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": "2708-6",
          "display": "Oxygen saturation in Arterial blood"
        },
        {
          "system": "http://loinc.org",
          "code": "59408-5",
          "display": "Oxygen saturation in Arterial blood by Pulse oximetry"
        },
        {
          "system": "urn:iso:std:iso:11073:10101",
          "code": "150456",
          "display": "MDC_PULS_OXIM_SAT_O2"
        }
      ]
    },
    "subject": {
      "reference": "Patient/07710040201"
    },
    "effectiveDateTime": "2014-12-05T09:30:10+01:00",
    "performer": [
      {
        "reference": "Organization/53453454",
        "display": "AUMC"
      }
    ],
    "valueQuantity": {
      "value": 95,
      "unit": "%",
      "system": "http://unitsofmeasure.org",
      "code": "%"
    },
    "interpretation": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/v3-
ObservationInterpretation",
            "code": "N",
            "display": "Normal"
          }
        ],
        "text": "Normal (applies to non-numeric results)"
      }
    ],
    "device": {
      "display": "Acme Pulse Oximeter 2000"
    },
    "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"
      }
    }
  ]
},
{
  "fullUrl": "https://<datahub_server>/Observation/bodytempP1",
  "resource": {
    "resourceType": "Observation",
    "id": "bodytempP1",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-10-21T16:01:43.864+00:00",
      "profile": [
        "http://tzf.com/fhir/StructureDefinition/Observation"
      ],
      "tag": [
        {
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "13182d5d-a006-46cd-96bc-a749f7d71ff5\t\t\t1"
        }
      ]
    },
    "identifier": [
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "bodytempP1"
      }
    ],
    "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/07710040201",
    "display": "Infant Example"
  },
  "encounter": {
    "display": "GP Visit"
  },
  "effectiveDateTime": "2020-07-02",
  "valueQuantity": {
    "value": 92.53,
    "unit": "Cel",
    "system": "http://unitsofmeasure.org",
    "code": "Cel"
  },
  "note": [
    {
      "text": "WHO Males, 0-2 years Chart"
    }
  ]
}
```

---

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# Observation - Vital Signs

## Use Case

A member uses a mobile application to retrieve their blood pressure and heart rate readings at their last doctor visit. The application UI calls an external endpoint which returns those readings at their last visit in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]
- GET [base]/Observation?patient=[reference]&code=[system]][value]
- GET [base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]&date={gt|lt|ge|le}

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Vital Signs Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

[base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs]

```
[base]/Observation?patient=[reference]&category=[system]|vital-signs
```

```
GET /Observation?patient=567890&category=http://hl7.org/fhir/observation-category|vital-signs
```

```
{
  "resourceType": "Bundle",
  "id": "ae7a5741-a577-44c4-9b2d-cb18d5847d1b",
  "meta": {
    "lastUpdated": "2021-01-26T20:48:50.012+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/datahub/fhir/Observation?category=http%3A%2F%2Fhl7.org%2Ffhir%2Fobservation-category%7Cvital-signs&patient=567890"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/datahub/fhir/Observation/7777777",
      "resource": {
        "resourceType": "Observation",
        "id": "7777777",
        "meta": {
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: blood-pressure</p><p><b>meta</b>: </p><p><b>identifier</b>: urn:uuid:187e0c12-8dd2-67e2-99b2-bf273c878281</p><p><b>basedOn</b>: </p><p><b>status</b>: final</p><p><b>category</b>: Vital Signs <span>(Details : {http://hl7.org/fhir/observation-category code 'vital-signs' = 'Vital Signs', given as 'Vital Signs'})</span></p><p><b>code</b>: Blood pressure systolic & diastolic <span>(Details : {LOINC code '85354-9' = 'lood pressure panel with all children optional', given as 'Bood pressure panel with all children optional'})</span></p><p><b>subject</b>: <a>Patient/example</a></p><p><b>effective</b>: Sep 17, 2012</p><p><b>performer</b>: <a>Practitioner/example</a></p><p><b>interpretation</b>: Below low normal <span>(Details : {http://hl7.org/fhir/v2/0078 code 'L' = 'Low', given as 'low'})</span></p><p><b>bodySite</b>: Right arm <span>(Details : {SNOMED CT code '368209003' = 'Right upper arm', given as 'Right arm'})</span></p><blockquote><p><b>component</b></p><p><b>code</b>: Systolic blood pressure <span>(Details : {LOINC code '8480-6' = 'Systolic blood pressure', given as 'Systolic blood pressure'}; {SNOMED CT code '271649006' = 'Systolic blood pressure', given as 'Systolic blood pressure'}; {http://acme.org/devices/clinical-codes code 'bp-s' = 'bp-s', given as 'Systolic Blood pressure'})</span></p><p><b>value</b>: 107 mmHg<span> (Details: UCUM code mm[Hg] = 'mmHg')</span></p><p><b>interpretation</b>: Normal <span>(Details : {http://hl7.org/fhir/v2/0078 code 'N' = 'Normal', given as 'normal'})</span></p></blockquote><blockquote><p><b>component</b></p><p><b>code</b>: Diastolic blood pressure <span>(Details : {LOINC code '8462-4' = 'Diastolic blood pressure', given as 'Diastolic blood pressure'})</span></p><p><b>value</b>: 60 mmHg<span> (Details: UCUM code mm[Hg] = 'mmHg')</span></p><p><b>interpretation</b>: Below low normal <span>(Details : {http://hl7.org/fhir/v2/0078 code 'L' = 'Low', given as 'low'})</span></p></blockquote></div>"
        },
        "identifier": [
          {
            "system": "urn:ietf:rfc:3986",
            "value": "urn:uuid:187e0c12-8dd2-67e2-99b2-bf273c878281"
          }
        ]
      }
    ]
  }
}
```

```
"basedOn": [
  {
    "identifier": {
      "system": "https://acme.org/identifiers",
      "value": "1234"
    }
  }
],
"status": "final",
"category": [
  {
    "coding": [
      {
        "system": "http://hl7.org/fhir/observation-category",
        "code": "vital-signs",
        "display": "Vital Signs"
      }
    ]
  }
],
"code": {
  "coding": [
    {
      "system": "http://loinc.org",
      "code": "85354-9",
      "display": "Blood pressure panel with all children optional"
    }
  ],
  "text": "Blood pressure systolic & diastolic"
},
"subject": {
  "reference": "Patient/567890"
},
"effectivePeriod": {
  "start": "2012-09-17",
  "end": "2012-09-17"
},
"performer": [
  {
    "reference": "Practitioner/example"
  }
],
"interpretation": [
  {
    "coding": [
      {
        "system": "http://hl7.org/fhir/v2/0078",
        "code": "L",
        "display": "low"
      }
    ],
    "text": "Below 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"
        }
      ]
    }
  }
]
```

```
    },
    {
      "system": "http://snomed.info/sct",
      "code": "271649006",
      "display": "Systolic blood pressure"
    },
    {
      "system": "http://acme.org/devices/clinical-codes",
      "code": "bp-s",
      "display": "Systolic Blood pressure"
    }
  ]
},
"valueQuantity": {
  "value": 107,
  "unit": "mmHg",
  "system": "http://unitsofmeasure.org",
  "code": "mm[Hg]"
},
"interpretation": [
  {
    "coding": [
      {
        "system": "http://hl7.org/fhir/v2/0078",
        "code": "N",
        "display": "normal"
      }
    ],
    "text": "Normal"
  }
]
},
{
  "code": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "8462-4",
        "display": "Diastolic blood pressure"
      }
    ]
  },
  "valueQuantity": {
    "value": 60,
    "unit": "mmHg",
    "system": "http://unitsofmeasure.org",
    "code": "mm[Hg]"
  },
  "interpretation": [
    {
      "coding": [
        {
          "system": "http://hl7.org/fhir/v2/0078",
          "code": "L",
          "display": "low"
        }
      ],
      "text": "Below low normal"
    }
  ]
}
]
```

[base]/Observation?patient=[reference]&category=[http://terminology.hl7.org/CodeSystem/observation-category|vital-signs&date={gt|lt|ge|le}]

```
[base]/Observation?patient=[reference]&category=[system]|vital-signs&date={gt|lt|ge|le}

GET /Observation?patient=567890&category=http://hl7.org/fhir/observation-category|vital-signs&date=ge2012-09-17

{
  "resourceType": "Bundle",
  "id": "4fba4060-1f8a-4ee8-a235-19defd757075",
  "meta": {
    "lastUpdated": "2021-01-26T20:51:25.646+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/datahub/fhir/Observation?category=http%3A%2F%2Fhl7.org%2Ffhir%2Fobservation-category%7Cvital-signs&date=ge2012-09-17&patient=567890"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/datahub/fhir/Observation/7777777",
      "resource": {
        "resourceType": "Observation",
        "id": "7777777",
        "meta": {
          "profile": [
            "http://tzf.com/fhir/StructureDefinition/Observation"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: blood-pressure</p><p><b>meta</b>: </p><p><b>identifier</b>: urn:uuid:187e0c12-8dd2-67e2-99b2-bf273c878281</p><p><b>basedOn</b>: </p><p><b>status</b>: final</p><p><b>category</b>: Vital Signs <span>(Details : {http://hl7.org/fhir/observation-category code 'vital-signs' = 'Vital Signs', given as 'Vital Signs'})</span></p><p><b>code</b>: Blood pressure systolic & diastolic <span>(Details : {LOINC code '85354-9' = 'lood pressure panel with all children optional', given as 'Bood pressure panel with all children optional'})</span></p><p><b>subject</b>: <a>Patient/example</a></p><p><b>effective</b>: Sep 17, 2012</p><p><b>performer</b>: <a>Practitioner/example</a></p><p><b>interpretation</b>: Below low normal <span>(Details : {http://hl7.org/fhir/v2/0078 code 'L' = 'Low', given as 'low'})</span></p><p><b>bodySite</b>: Right arm <span>(Details : {SNOMED CT code '368209003' = 'Right upper arm', given as 'Right arm'})</span></p><p><b>component</b></p><p><b>code</b>: Systolic blood pressure <span>(Details : {LOINC code '8480-6' = 'Systolic blood pressure', given as 'Systolic blood pressure'}; {SNOMED CT code '271649006' = 'Systolic blood pressure', given as 'Systolic blood pressure'}; {http://acme.org/devices/clinical-codes code 'bp-s' = 'bp-s', given as 'Systolic Blood pressure'})</span></p><p><b>value</b>: 107 mmHg<span> (Details: UCUM code mm[Hg] = 'mmHg')</span></p><p><b>interpretation</b>: Normal <span>(Details : {http://hl7.org/fhir/v2/0078 code 'N' = 'Normal', given as 'normal'})</span></p></blockquote><blockquote><p><b>component</b></p><p><b>code</b>: Diastolic blood pressure <span>(Details : {LOINC code '8462-4' = 'Diastolic blood pressure', given as 'Diastolic blood pressure'})</span></p><p><b>value</b>: 60 mmHg<span> (Details: UCUM code mm[Hg] = 'mmHg')</span></p><p><b>interpretation</b>: Below low normal <span>(Details : {http://hl7.org/fhir/v2/0078 code 'L' = 'Low', given as 'low'})</span></p></blockquote></div>"
        },
        "identifier": [
          {
            "system": "urn:ietf:rfc:3986",
            "value": "urn:uuid:187e0c12-8dd2-67e2-99b2-bf273c878281"
          }
        ],
        "basedOn": [
          {

```

```

        "identifier": {
          "system": "https://acme.org/identifiers",
          "value": "1234"
        }
      ],
      "status": "final",
      "category": [
        {
          "coding": [
            {
              "system": "http://hl7.org/fhir/observation-category",
              "code": "vital-signs",
              "display": "Vital Signs"
            }
          ]
        }
      ],
      "code": {
        "coding": [
          {
            "system": "http://loinc.org",
            "code": "85354-9",
            "display": "Blood pressure panel with all children optional"
          }
        ],
        "text": "Blood pressure systolic & diastolic"
      },
      "subject": {
        "reference": "Patient/567890"
      },
      "effectivePeriod": {
        "start": "2012-09-17",
        "end": "2012-09-17"
      },
      "performer": [
        {
          "reference": "Practitioner/example"
        }
      ],
      "interpretation": [
        {
          "coding": [
            {
              "system": "http://hl7.org/fhir/v2/0078",
              "code": "L",
              "display": "low"
            }
          ],
          "text": "Below 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"
              }
            ]
          }
        }
      ]
    }
  ]
}

```

```
        "system": "http://snomed.info/sct",
        "code": "271649006",
        "display": "Systolic blood pressure"
      },
      {
        "system": "http://acme.org/devices/clinical-codes",
        "code": "bp-s",
        "display": "Systolic Blood pressure"
      }
    ]
  },
  "valueQuantity": {
    "value": 107,
    "unit": "mmHg",
    "system": "http://unitsofmeasure.org",
    "code": "mm[Hg]"
  },
  "interpretation": [
    {
      "coding": [
        {
          "system": "http://hl7.org/fhir/v2/0078",
          "code": "N",
          "display": "normal"
        }
      ],
      "text": "Normal"
    }
  ],
  "code": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "8462-4",
        "display": "Diastolic blood pressure"
      }
    ]
  },
  "valueQuantity": {
    "value": 60,
    "unit": "mmHg",
    "system": "http://unitsofmeasure.org",
    "code": "mm[Hg]"
  },
  "interpretation": [
    {
      "coding": [
        {
          "system": "http://hl7.org/fhir/v2/0078",
          "code": "L",
          "display": "low"
        }
      ],
      "text": "Below low normal"
    }
  ]
}
```

---

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# Organization

## Use Case

A mobile application would be authorized to access a health plan's organization data for a provider, an employer (group), the Payer itself, or a network in order to display contact information for that organization. When a user loads the organization screen in the mobile application UI, the UI calls in to the external endpoint for the organization. That call retrieves the Organization data and returns it in the industry-standard format. The organization information is then translated by the mobile application for display in a user friendly way.

## Supported Query Parameters

**Availability:** 5.90.001.000

These query parameters can be sent in any combination.

### Query Parameters

Query Parameter	Type	Description
<a href="#">address-city</a>	string	Select organizations with an address in the specified city
<a href="#">address-country</a>	string	Select organizations with an address in the specified country
<a href="#">address-postalcode</a>	string	Select organizations with an address with the specified postal code
<a href="#">address-state</a>	string	Select organizations with an address in the specified state
<a href="#">address</a>	string	Select organizations with the specified address (matches any of the string elements of an address)
<a href="#">coverage-area</a>	reference	Select health insurance provider networks available in a region described by the specified location
<a href="#">endpoint</a>	reference	Select Organizations with the specified endpoint
<a href="#">identifier-assigner</a>	reference	Select Organizations with an identifier issued by the specified organization
<a href="#">identifier</a>	token <sup>1</sup>	Select Organizations with the specified identifier
<a href="#">name</a>	string	Select Organizations with the specified name
<a href="#">partof</a>	reference	Select Organizations that are part of the specified organization
<a href="#">qualification-code</a>	token	Select Organizations with a type of qualification matching the specified code
<a href="#">qualification-issuer</a>	reference	Select Organizations with a qualification issued by the specified organization

	ce	
<a href="#">qualification-status</a>	token	Select Organizations with a qualification status matching the specified code
<a href="#">qualification-wherevalid-code</a>	token	Select Organizations with a qualification that is valid at the location indicated by the specified code
<a href="#">qualification-wherevalid-location</a>	reference	Select Organizations with a qualification that is valid at the specified location
<a href="#">telecom-available-days</a>	token	Days available
<a href="#">telecom-available-end-time</a>	token	End time
<a href="#">telecom-available-start-time</a>	token	Start time
<a href="#">type</a>	token	Select Organizations of the specified type
<a href="#">via-intermediary</a>	reference	Select Organizations with contact information available through the specified intermediary

1. A token refers to either [system][value] or [value]. Refer to <https://www.hl7.org/fhir/search.html#token> where the code is the Identifier.value.

## Sample GET Requests

- GET [base]/Organization/[id]
- GET [base]/Organization?name=XXXXX
- GET [base]/Organization?address=xxxxx
- GET [base]/Organization?identifier=[system][value]

## Changing the Data Profile of the GET Response

For the [base]/Organization/[id] read request, you can include the **X-Profile** header parameter in the request. This header parameter allows you to change the profile of the response.

For the three search requests listed below, you can change the data profile in the response using the query parameter, **\_profile**.. You can also use the header parameter; **X-Profile**. However, if you include both the **\_profile** query parameter and the **X-Profile** header parameter in a request, the **\_profile** query parameter takes precedence:

- [base]/Organization?name=XXXXX
- [base]/Organization?address=xxxxx
- [base]/Organization?identifier=[system][value]

The value of **\_profile** and **X-Profile** are the following:

- **CARIN BB for Provider Group, Policyholder, and Payor:** <http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-organization>

- **Da Vinci PDEX Plan Net for Provider Group:** <http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Organization>
- **Da Vinci PDEX Plan Net for Network:** <http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Network>
- **US Core for Provider Group, Policyholder and Payor:** <http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization>

The following example shows the use of the `_profile` query parameter in one of the search requests:

```
GET /Organization?name=Acme%20Clinic@_profile=http://hl7.org/fhir/us/car/StructureDefinition/car-in-bb-organization
```

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN](#)
- [US Core](#)
- [Da Vinci PDEX Plan Net](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

**[base]/Organization/XXXXX**

CARIN BB

-----

```
[base] / Organization / XXXXX

GET /Organization/53453454

{
  "resourceType": "Organization",
  "id": "53453454",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2012-12-12T00:00:00.000+00:00",
    "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-organization"]
  },
  "identifier": [
    {
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "1407071236"
    },
    {
      "system": "http://example.org/fhir/sid/us-tin",
      "value": "121111111"
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "53453454"
    }
  ],
  "active": true,
  "type": [
    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/organization-type",
          "code": "prov",
          "display": "Healthcare Provider"
        }
      ]
    }
  ],
  "name": "Acme Clinic",
  "telecom": [
    {
      "system": "phone",
      "value": "(+1) 734-677-7777"
    },
    {
      "system": "email",
      "value": "customer-service@acme-clinic.org"
    }
  ],
  "address": [
    {
      "line": ["3300 Washtenaw Avenue, Suite 227"],
      "city": "Amherst",
      "state": "MA",
      "postalCode": "01002",
      "country": "USA"
    }
  ]
}
```

## [base]/Organization?name=XXXXX

### CARIN BB

```
[base] / Organization ? name = XXXXX

GET /Organization?name=Acme%20Clinic@_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-organization

{
  "resourceType": "Organization",
  "id": "53453454",
```

```

"meta": {
  "versionId": "1",
  "lastUpdated": "2012-12-12T00:00:00.000+00:00",
  "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-organization"]
},
"identifier": [{
  "system": "http://hl7.org/fhir/sid/us-npi",
  "value": "1407071236"
}, {
  "system": "http://example.org/fhir/sid/us-tin",
  "value": "121111111"
}, {
  "use": "official",
  "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
  "value": "53453454"
}
],
"active": true,
"type": [{
  "coding": [{
    "system": "http://terminology.hl7.org/CodeSystem/organization-type",
    "code": "prov",
    "display": "Healthcare Provider"
  }
]
},
],
"name": "Acme Clinic",
"telecom": [{
  "system": "phone",
  "value": "(+1) 734-677-7777"
}, {
  "system": "email",
  "value": "customer-service@acme-clinic.org"
}
],
"address": [{
  "line": ["3300 Washtenaw Avenue, Suite 227"],
  "city": "Amherst",
  "state": "MA",
  "postalCode": "01002",
  "country": "USA"
}
]
}

```

## US Core

```

[base] / Organization ? name = XXXXX

GET /Organization?name=Acme%20Clinic&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization

{
  "resourceType": "Bundle",
  "id": "fa34af67-3a88-454f-aaae-b13390ed3439",
  "meta": {
    "lastUpdated": "2021-01-24T03:41:53.279+00:00"
  },
  "type": "searchset",
  "total": 6,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Organization?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Favinci-pdex-plan-net%2FStructureDefinition%2Fplannet-Organization&name=Acme%20Clinic"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=59371fb7-a8b5-57cd-86e5-

```

```

418dc83e5eb3&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
"entry": [{
  "fullUrl": "https://<datahub_server>/Organization/53453454",
  "resource": {
    "resourceType": "Organization",
    "id": "53453454",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2012-12-12T00:00:00.000+00:00",
      "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Organization"]
    },
    "identifier": [{
      "system": "http://hl7.org.fhir/sid/us-npi",
      "value": "1407071236"
    }, {
      "system": "http://example.org/fhir/sid/us-tin",
      "value": "121111111"
    }, {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "53453454"
    }
  ],
  "active": true,
  "type": [{
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/organization-type",
      "code": "prov",
      "display": "Healthcare Provider"
    }
  ]
}],
  "name": "Acme Clinic",
  "telecom": [{
    "system": "phone",
    "value": "(+1) 734-677-7777"
  }, {
    "system": "email",
    "value": "customer-service@acme-clinic.org"
  }
],
  "address": [{
    "line": ["3300 Washtenaw Avenue, Suite 227"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002",
    "country": "USA"
  }
]
}, {
  "fullUrl": "https://<datahub_server>/Organization/152eed0c-6905-4464-9132-c0d4dc4b5a4d",
  "resource": {
    "resourceType": "Organization",
    "id": "152eed0c-6905-4464-9132-c0d4dc4b5a4d",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-10-05T13:14:00.268+00:00",
      "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Organization"],
      "tag": [{
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "b927428e-d23a-47dd-8297-bb0e72489678\t\t\t1"
      }
    ]
  }
}],
}

```

```

      "text": {
        "status": "generated",
        "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with  

Details</b></p><p><b>id</b>: example-organization-2</p><p><b>meta</b>: </p><p><b>identifier</b>:  

1407071236, 121111111</p><p><b>active</b>: true</p><p><b>type</b>: Healthcare Provider <span style=\"  

background: LightGoldenRodYellow\">(Details : {http://terminology.hl7.org/CodeSystem/organization-type code  

'prov' = 'Healthcare Provider', given as 'Healthcare Provider'})</span></p><p><b>name</b>: Acme Clinic<  

/p><p><b>telecom</b>: ph: (+1) 734-677-7777, customer-service@acme-clinic.org</p><p><b>address</b>: 3300  

Washtenaw Avenue, Suite 227 Amherst MA 01002 USA </p></div>"
      },
      "identifier": [{
        "system": "http://hl7.org/fhir/sid/us-npi",
        "value": "1407071236"
      }, {
        "system": "http://example.org/fhir/sid/us-tin",
        "value": "121111111"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "152eed0c-6905-4464-9132-c0d4dc4b5a4d"
      }
    ],
    "active": true,
    "type": [{
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/organization-type",
        "code": "prov",
        "display": "Healthcare Provider"
      }
    ]
  }
],
"name": "Acme Clinic",
"telecom": [{
  "system": "phone",
  "value": "(+1) 734-677-7777"
}, {
  "system": "email",
  "value": "customer-service@acme-clinic.org"
}
],
"address": [{
  "line": ["3300 Washtenaw Avenue, Suite 227"],
  "city": "Amherst",
  "state": "MA",
  "postalCode": "01002",
  "country": "USA"
}
]
}

```

## DaVinci PDEX Plan Net

[base] / Organization ? name = XXXXX

GET /Organization?name=Acme%20Clinic\_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Organization

```

{
  "resourceType": "Bundle",
  "id": "fa34af67-3a88-454f-aaae-b13390ed3439",
  "meta": {
    "lastUpdated": "2021-01-24T03:41:53.279+00:00"
  },
  "type": "searchset",

```

```

    "total": 6,
    "link": [{
      "relation": "self",
      "url": "https://<datahub_server>/Organization?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-Organization&name=Acme%20Clinic"
    }, {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=59371fb7-a8b5-57cd-86e5-418dc83e5eb3&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Organization/53453454",
    "resource": {
      "resourceType": "Organization",
      "id": "53453454",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2012-12-12T00:00:00.000+00:00",
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Organization"]
      },
      "identifier": [{
        "system": "http://hl7.org.fhir/sid/us-npi",
        "value": "1407071236"
      }, {
        "system": "http://example.org/fhir/sid/us-tin",
        "value": "121111111"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "53453454"
      }
    ],
    "active": true,
    "type": [{
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/organization-type",
        "code": "prov",
        "display": "Healthcare Provider"
      }
    ]
  },
  "name": "Acme Clinic",
  "telecom": [{
    "system": "phone",
    "value": "(+1) 734-677-7777"
  }, {
    "system": "email",
    "value": "customer-service@acme-clinic.org"
  }
  ],
  "address": [{
    "line": ["3300 Washtenaw Avenue, Suite 227"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002",
    "country": "USA"
  }
  ],
  }, {
    "fullUrl": "https://<datahub_server>/Organization/152eed0c-6905-4464-9132-c0d4dc4b5a4d",
    "resource": {
      "resourceType": "Organization",
      "id": "152eed0c-6905-4464-9132-c0d4dc4b5a4d",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-05T13:14:00.268+00:00",
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-

```





```
[base] / Organization ? address = xxxxx

GET /Organization?address=3300%20Washtenaw%20Avenue%20Suite%20227&_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-organization

{
  "resourceType": "Organization",
  "id": "53453454",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2012-12-12T00:00:00.000+00:00",
    "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-organization"]
  },
  "identifier": [
    {
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "1407071236"
    },
    {
      "system": "http://example.org/fhir/sid/us-tin",
      "value": "121111111"
    },
    {
      "use": "official",
      "system": "com.cognizant.transform.fhir.identifiers.logical-identifier",
      "value": "53453454"
    }
  ],
  "active": true,
  "type": [
    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/organization-type",
          "code": "prov",
          "display": "Healthcare Provider"
        }
      ]
    }
  ],
  "name": "Acme Clinic",
  "telecom": [
    {
      "system": "phone",
      "value": "(+1) 734-677-7777"
    },
    {
      "system": "email",
      "value": "customer-service@acme-clinic.org"
    }
  ],
  "address": [
    {
      "line": ["3300 Washtenaw Avenue, Suite 227"],
      "city": "Amherst",
      "state": "MA",
      "postalCode": "01002",
      "country": "USA"
    }
  ]
}
```

## US Core

```
[base] / Organization ? address = xxxxx

GET /Organization?address=3300%20Washtenaw%20Avenue%20Suite%20227&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization

{
  "resourceType": "Bundle",
  "id": "ea434cef-b41b-4df6-8fe6-f23d297d769f",
  "meta": {
    "lastUpdated": "2021-01-24T03:53:30.330+00:00"
  },
}
```

```

    "type": "searchset",
    "total": 57,
    "link": [{
      "relation": "self",
      "url": "https://<datahub_server>/Organization?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%
2FStructureDefinition%2Fus-core-organization&address=3300%20Washtenaw%20Avenue%20Suite%20227"
    }, {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=071d6649-6268-5b01-9b59-
fe118e3eae78&_getpagesoffset=2&_count=2&_pretty=true&_bundleType=searchset"
    }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Organization/53453454",
    "resource": {
      "resourceType": "Organization",
      "id": "53453454",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2012-12-12T00:00:00.000+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization"]
      },
      "identifier": [{
        "system": "http://hl7.org/fhir/sid/us-npi",
        "value": "1407071236"
      }, {
        "system": "http://example.org/fhir/sid/us-tin",
        "value": "121111111"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "53453454"
      }
    ],
    "active": true,
    "type": [{
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/organization-type",
        "code": "prov",
        "display": "Healthcare Provider"
      }
    ]
  },
  {
    "name": "Acme Clinic",
    "telecom": [{
      "system": "phone",
      "value": "(+1) 734-677-7777"
    }, {
      "system": "email",
      "value": "customer-service@acme-clinic.org"
    }
  ],
  {
    "address": [{
      "line": ["3300 Washtenaw Avenue, Suite 227"],
      "city": "Amherst",
      "state": "MA",
      "postalCode": "01002",
      "country": "USA"
    }
  ]
}, {
  "fullUrl": "https://<datahub_server>/Organization/Org45",
  "resource": {
    "resourceType": "Organization",
    "id": "Org45",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-28T01:25:58.433-05:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization"],

```

```

        "tag": [{
          "system": "http://terminology.hl7.org/CodeSystem/common-tags",
          "code": "user-request-id",
          "display": "a9756252-e220-4a0e-bc7c-8df173e16242\t\t\t1"
        }
      ],
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
      },
      "identifier": [{
        "system": "http://hl7.org/fhir/sid/us-npi",
        "value": "987654"
      }, {
        "system": "urn:oid:2.16.840.1.113883.4.4",
        "value": "AB12346"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "Org45"
      }
    ],
    "active": true,
    "name": "Hospital ABC",
    "telecom": [{
      "system": "phone",
      "value": "734-677-7777",
      "use": "work"
    }, {
      "system": "email",
      "value": "customer-service@hospital-abc.org",
      "use": "work"
    }
  ],
  "address": [{
    "line": ["3300 Washtenaw Avenue, Suite 227"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002",
    "country": "USA"
  }
]
}

```

## DaVinci PDEX Plan Net

```
[base] / Organization ? address = xxxxxx
```

```
GET /Organization?address=3300%20Washtenaw%20Avenue%20Suite%202227&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Organization
```

```

{
  "resourceType": "Bundle",
  "id": "1da6364e-0a33-4d74-990a-29cb5c168bc2",
  "meta": {
    "lastUpdated": "2021-01-24T03:44:52.761+00:00"
  },
  "type": "searchset",
  "total": 57,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Organization?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-Organization&address=3300%20Washtenaw%20Avenue%

```

```

20Suite%20227"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=454645ce-7faf-5957-8215-
03bf39b7ec64&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
"entry": [{
  "fullUrl": "https://<datahub_server>/Organization/53453454",
  "resource": {
    "resourceType": "Organization",
    "id": "53453454",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2012-12-12T00:00:00.000+00:00",
      "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Organization"]
    },
    "identifier": [{
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "1407071236"
    }, {
      "system": "http://example.org/fhir/sid/us-tin",
      "value": "121111111"
    }, {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "53453454"
    }
  ],
  "active": true,
  "type": [{
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/organization-type",
      "code": "prov",
      "display": "Healthcare Provider"
    }
  ]
}],
  "name": "Acme Clinic",
  "telecom": [{
    "system": "phone",
    "value": "(+1) 734-677-7777"
  }, {
    "system": "email",
    "value": "customer-service@acme-clinic.org"
  }
],
  "address": [{
    "line": ["3300 Washtenaw Avenue, Suite 227"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002",
    "country": "USA"
  }
]
}, {
  "fullUrl": "https://<datahub_server>/Organization/Org45",
  "resource": {
    "resourceType": "Organization",
    "id": "Org45",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-09-28T01:25:58.433-05:00",
      "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Organization"],
      "tag": [{
        "system": "http://terminology.hl7.org/CodeSystem/common-tags",
        "code": "user-request-id",

```



```

        "value": "1407071236"
      }, {
        "system": "http://example.org/fhir/sid/us-tin",
        "value": "121111111"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "53453454"
      }
    ],
    "active": true,
    "type": [{
      "coding": [{
        "system": "http://terminology.hl7.org/CodeSystem/organization-type",
        "code": "prov",
        "display": "Healthcare Provider"
      }
    ]
  }
],
"name": "Acme Clinic",
"telecom": [{
  "system": "phone",
  "value": "(+1) 734-677-7777"
}, {
  "system": "email",
  "value": "customer-service@acme-clinic.org"
}
],
"address": [{
  "line": ["3300 Washtenaw Avenue, Suite 227"],
  "city": "Amherst",
  "state": "MA",
  "postalCode": "01002",
  "country": "USA"
}
]
}

```

## US Core

```

[base] / Organization ? identifier = [system] | [value]

GET /Organization?identifier=http://example.org/fhir/sid/us-tin|121111111&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization

{
  "resourceType": "Bundle",
  "id": "49ac754a-6b1f-496f-a838-68232d7c2949",
  "meta": {
    "lastUpdated": "2021-01-24T03:50:31.539+00:00"
  },
  "type": "searchset",
  "total": 6,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Organization?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%2FStructureDefinition%2Fus-core-organization&identifier=http%3A%2F%2Fexample.org%2Ffhir%2Fsid%2Fus-tin%7C121111111"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=f35bc09e-24dc-548d-88aa-57f063760cc7&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Organization/53453454",
    "resource": {

```

```

    "resourceType": "Organization",
    "id": "53453454",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2012-12-12T00:00:00.000+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization"]
    },
    "identifier": [
      {
        "system": "http://hl7.org/fhir/sid/us-npi",
        "value": "1407071236"
      },
      {
        "system": "http://example.org/fhir/sid/us-tin",
        "value": "121111111"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "53453454"
      }
    ],
    "active": true,
    "type": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/organization-type",
            "code": "prov",
            "display": "Healthcare Provider"
          }
        ]
      }
    ],
    "name": "Acme Clinic",
    "telecom": [
      {
        "system": "phone",
        "value": "(+1) 734-677-7777"
      },
      {
        "system": "email",
        "value": "customer-service@acme-clinic.org"
      }
    ],
    "address": [
      {
        "line": ["3300 Washtenaw Avenue, Suite 227"],
        "city": "Amherst",
        "state": "MA",
        "postalCode": "01002",
        "country": "USA"
      }
    ]
  }, {
    "fullUrl": "https://<datahub_server>/Organization/152eed0c-6905-4464-9132-c0d4dc4b5a4d",
    "resource": {
      "resourceType": "Organization",
      "id": "152eed0c-6905-4464-9132-c0d4dc4b5a4d",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-05T13:14:00.268+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization"],
        "tag": [
          {
            "system": "tranzform-apim-request-ns",
            "code": "user-request-id",
            "display": "b927428e-d23a-47dd-8297-bb0e72489678\t\t\t1"
          }
        ]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: example-organization-2</p><p><b>meta</b>: </p><p><b>identifier</b>:
1407071236, 121111111</p><p><b>active</b>: true</p><p><b>type</b>: Healthcare Provider <span style='
background: LightGoldenRodYellow'>(Details : {http://terminology.hl7.org/CodeSystem/organization-type code
'prov' = 'Healthcare Provider', given as 'Healthcare Provider'})</span></p><p><b>name</b>: Acme Clinic<
/p><p><b>telecom</b>: ph: (+1) 734-677-7777, customer-service@acme-clinic.org</p><p><b>address</b>: 3300

```





```

        "url": "https://<datahub_server>?_getpages=12e6fc78-dc14-545a-af0b-
b44ab94d4930&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    },
    "entry": [{
        "fullUrl": "https://<datahub_server>/Organization/53453454",
        "resource": {
            "resourceType": "Organization",
            "id": "53453454",
            "meta": {
                "versionId": "1",
                "lastUpdated": "2012-12-12T00:00:00.000+00:00",
                "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Organization"]
            },
            "identifier": [{
                "system": "http://hl7.org/fhir/sid/us-npi",
                "value": "1407071236"
            }, {
                "system": "http://example.org/fhir/sid/us-tin",
                "value": "121111111"
            }, {
                "use": "official",
                "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
                "value": "53453454"
            }
        ],
        "active": true,
        "type": [{
            "coding": [{
                "system": "http://terminology.hl7.org/CodeSystem/organization-type",
                "code": "prov",
                "display": "Healthcare Provider"
            }
        ]
    },
    {
        "name": "Acme Clinic",
        "telecom": [{
            "system": "phone",
            "value": "(+1) 734-677-7777"
        }, {
            "system": "email",
            "value": "customer-service@acme-clinic.org"
        }
    ],
    {
        "address": [{
            "line": ["3300 Washtenaw Avenue, Suite 227"],
            "city": "Amherst",
            "state": "MA",
            "postalCode": "01002",
            "country": "USA"
        }
    ]
}, {
    "fullUrl": "https://<datahub_server>/Organization/152eed0c-6905-4464-9132-c0d4dc4b5a4d",
    "resource": {
        "resourceType": "Organization",
        "id": "152eed0c-6905-4464-9132-c0d4dc4b5a4d",
        "meta": {
            "versionId": "1",
            "lastUpdated": "2020-10-05T13:14:00.268+00:00",
            "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
Organization"],
            "tag": [{
                "system": "tranzform-apim-request-ns",
                "code": "user-request-id",
                "display": "b927428e-d23a-47dd-8297-bb0e72489678\t\t\t\t1"
            }
        ]
    }
}
]

```

```
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: example-organization-2</p><p><b>meta</b>: </p><p><b>identifier</b>:
1407071236, 121111111</p><p><b>active</b>: true</p><p><b>type</b>: Healthcare Provider <span style=\"
background: LightGoldenRodYellow\">(Details : {http://terminology.hl7.org/CodeSystem/organization-type code
'prov' = 'Healthcare Provider', given as 'Healthcare Provider'})</span></p><p><b>name</b>: Acme Clinic<
/p><p><b>telecom</b>: ph: (+1) 734-677-7777, customer-service@acme-clinic.org</p><p><b>address</b>: 3300
Washtenaw Avenue, Suite 227 Amherst MA 01002 USA </p></div>"
    },
    "identifier": [{
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "1407071236"
    }, {
      "system": "http://example.org/fhir/sid/us-tin",
      "value": "121111111"
    }, {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "152eed0c-6905-4464-9132-c0d4dc4b5a4d"
    }
  ],
  "active": true,
  "type": [{
    "coding": [{
      "system": "http://terminology.hl7.org/CodeSystem/organization-type",
      "code": "prov",
      "display": "Healthcare Provider"
    }
  ]
}],
  "name": "Acme Clinic",
  "telecom": [{
    "system": "phone",
    "value": "(+1) 734-677-7777"
  }, {
    "system": "email",
    "value": "customer-service@acme-clinic.org"
  }
],
  "address": [{
    "line": ["3300 Washtenaw Avenue, Suite 227"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002",
    "country": "USA"
  }
]
}
```

---

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# OrganizationAffiliation

## Use Case

The organization affiliation endpoint is used to retrieve relationships between two or more organizations. This relationship can include the services one organization provides to another, It can also include the locations where those services are provided and when the services are available at those locations. Users can retrieve all organization affiliations associated with an Organization Affiliation ID for display.

## Supported Query Parameters

**Availability:** 5.90.001.000

These query parameters can be sent in any combination.

### Query Parameters

ame	Base Resources	Type	Description
<a href="#">endpoint</a>	OrganizationAffiliation	reference	Select OrganizationAffiliations with the specified endpoint
<a href="#">identifier-assigner</a>	OrganizationAffiliation	reference	Select OrganizationAffiliations with an identifier issued by the specified organization
<a href="#">identifier</a>	OrganizationAffiliation	token <sup>1</sup>	Select OrganizationAffiliations with the specified identifier
<a href="#">location</a>	OrganizationAffiliation	reference	Select OrganizationAffiliations available at the specified location
<a href="#">network</a>	OrganizationAffiliation	reference	Select roles where the organization is a member of the specified health insurance provider network
<a href="#">participating-organization</a>	OrganizationAffiliation	reference	Select roles filled by the specified organization
<a href="#">primary-organization</a>	OrganizationAffiliation	reference	Select roles offered by the specified organization
<a href="#">role</a>	OrganizationAffiliation	token	Select OrganizationAffiliations with the specified role
<a href="#">service</a>	OrganizationAffiliation	reference	Select OrganizationAffiliations providing the specified service
<a href="#">specialty</a>	OrganizationAffiliation	token	Select OrganizationAffiliations associated with the specified specialty
<a href="#">via-intermediary</a>	OrganizationAffiliation	reference	

	filiation	nce	Select OrganizationAffiliations with contact information available through the specified intermediary
--	-----------	-----	---

1. A token refers to either [system][value] or [ value]. Refer to <https://www.hl7.org/fhir/search.html#token> where the code is the Identifier.value.

## Supported GET Requests

- GET [base]/OrganizationAffiliation?identifier=[system][value]
- GET [base]/OrganizationAffiliation?network=[reference]
- GET [base]/OrganizationAffiliation?specialty=[system][value]
- GET [base]/OrganizationAffiliation?service=[reference]

## Response Parameters

The response parameters for the GET method are as follows:

- [Provider Directory - PDEX - Plan Net - Organization Affiliation](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

[base]/OrganizationAffiliation?identifier=[system]][value]

```
[base]/OrganizationAffiliation?identifier=[system] | [value]
```

```
GET /OrganizationAffiliation?identifier=com.cognizant.tranzform.fhir.identifiers.logical-
identifier|orgrole1
```

```
{
  "resourceType": "Bundle",
  "id": "640492d3-f54c-4fa4-9519-477d6394dea5",
  "meta": {
    "lastUpdated": "2021-01-26T22:22:48.929+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/OrganizationAffiliation?network=http%3A%2F%2Fhl7.org%2Ffhir%
2Fig%2Fvmdir%2FNetwork%2Fpatriotppo"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/OrganizationAffiliation/orgrole1",
      "resource": {
        "resourceType": "OrganizationAffiliation",
        "id": "orgrole1",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/OrganizationAffiliation"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "b30110a2-f630-4b60-9f82-df967c9de7a8\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated
Narrative with Details</b>\n\t\t\t</p>\n\t\t\t</div>"
        },
        "identifier": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/uv/vmdir/StructureDefinition/identifier-status",
                "valueCode": "active"
              }
            ],
            "use": "secondary",
            "system": "http://example.org/www.foundingfathersmemorial.com",
            "value": "service002"
          },
          {
            "use": "official",
            "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
            "value": "orgrole1"
          }
        ]
      }
    }
  ]
}
```

```

    }
  ],
  "active": true,
  "period": {
    "start": "2018-02-09",
    "end": "2022-02-01"
  },
  "participatingOrganization": {
    "reference": "Organization/PharmChain",
    "display": "Independence Rehabilitation Services, Inc."
  },
  "network": [
    {
      "reference": "http://hl7.org/fhir/ig/vhdir/Network/patriotppo",
      "display": "Patriot Preferred Provider Network"
    }
  ],
  "code": [
    {
      "coding": [
        {
          "system": "http://hl7.org/fhir/organization-role",
          "code": "provider",
          "display": "Provider",
          "userSelected": true
        }
      ],
      "text": "Provider of rehabilitation services"
    }
  ],
  "telecom": [
    {
      "extension": [
        {
          "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/contactpoint-
availabletime",
          "extension": [
            {
              "url": "daysOfWeek",
              "valueCode": "mon"
            },
            {
              "url": "daysOfWeek",
              "valueCode": "tue"
            },
            {
              "url": "daysOfWeek",
              "valueCode": "wed"
            },
            {
              "url": "daysOfWeek",
              "valueCode": "thu"
            },
            {
              "url": "daysOfWeek",
              "valueCode": "fri"
            },
            {
              "url": "availableStartTime",
              "valueTime": "08:00:00"
            },
            {
              "url": "availableEndTime",
              "valueTime": "18:00:00"
            }
          ]
        }
      ]
    }
  ],
  "system": "phone",
  "value": "202-109-8765",
  "use": "work"

```





```

        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "orgrole1"
    }
  ],
  "active": true,
  "period": {
    "start": "2018-02-09",
    "end": "2022-02-01"
  },
  "participatingOrganization": {
    "reference": "Organization/PharmChain",
    "display": "Independence Rehabilitation Services, Inc."
  },
  "network": [
    {
      "reference": "http://hl7.org/fhir/ig/vhdir/Network/patriotppo",
      "display": "Patriot Preferred Provider Network"
    }
  ],
  "code": [
    {
      "coding": [
        {
          "system": "http://hl7.org/fhir/organization-role",
          "code": "provider",
          "display": "Provider",
          "userSelected": true
        }
      ],
      "text": "Provider of rehabilitation services"
    }
  ],
  "telecom": [
    {
      "extension": [
        {
          "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/contactpoint-
availabletime",
          "extension": [
            {
              "url": "daysOfWeek",
              "valueCode": "mon"
            },
            {
              "url": "daysOfWeek",
              "valueCode": "tue"
            },
            {
              "url": "daysOfWeek",
              "valueCode": "wed"
            },
            {
              "url": "daysOfWeek",
              "valueCode": "thu"
            },
            {
              "url": "daysOfWeek",
              "valueCode": "fri"
            },
            {
              "url": "availableStartTime",
              "valueTime": "08:00:00"
            },
            {
              "url": "availableEndTime",
              "valueTime": "18:00:00"
            }
          ]
        }
      ]
    }
  ],
  "system": "phone",

```

```

        "value": "202-109-8765",
        "use": "work"
      }
    ]
  }
}

```

## [base]/OrganizationAffiliation?service=[reference]

```
[base]/OrganizationAffiliation?service=[reference]
```

```
GET /OrganizationAffiliation?service=http://hl7.org/fhir/ig/vhdir/HealthcareService/independencerehab1
```

```

{
  "resourceType": "Bundle",
  "id": "5197feb0-b02c-4dbb-99dd-eb51ae9e97",
  "meta": {
    "lastUpdated": "2021-01-26T22:33:11.962+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/OrganizationAffiliation?service=http%3A%2F%2Fhl7.org%2Ffhir%2Ffig%2Fvhdir%2FhealthcareService%2Findependencerehab1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/OrganizationAffiliation/orgrole1",
      "resource": {
        "resourceType": "OrganizationAffiliation",
        "id": "orgrole1",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T22:49:23.000-05:00",
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/OrganizationAffiliation"
          ],
          "tag": [
            {
              "system": "tranzform-apim-request-ns",
              "code": "user-request-id",
              "display": "b30110a2-f630-4b60-9f82-df967c9de7a8\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
        },
        "identifier": [
          {
            "extension": [
              {
                "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/identifier-status",
                "valueCode": "active"
              }
            ],
            "use": "secondary",
            "system": "http://example.org/www.foundingfathersmemorial.com",
            "value": "service002"
          }
        ]
      }
    }
  ]
}

```

```

        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "orgrole1"
      }
    ],
    "active": true,
    "period": {
      "start": "2018-02-09",
      "end": "2022-02-01"
    },
    "participatingOrganization": {
      "reference": "Organization/PharmChain",
      "display": "Independence Rehabilitation Services, Inc."
    },
    "network": [
      {
        "reference": "http://hl7.org/fhir/ig/vhdir/Network/patriotppo",
        "display": "Patriot Preferred Provider Network"
      }
    ],
    "code": [
      {
        "coding": [
          {
            "system": "http://hl7.org/fhir/organization-role",
            "code": "provider",
            "display": "Provider",
            "userSelected": true
          }
        ],
        "text": "Provider of rehabilitation services"
      }
    ],
    "specialty": [
      {
        "coding": [
          {
            "system": "http://snomed.info/sct",
            "code": "394602003",
            "display": "Rehabilitation - specialty"
          }
        ],
        "text": "Rehabilitation"
      }
    ],
    "healthcareService": [
      {
        "reference": "http://hl7.org/fhir/ig/vhdir/HealthcareService/independencerehab1",
        "display": "Inpatient rehabilitation services"
      },
      {
        "reference": "http://hl7.org/fhir/ig/vhdir/HealthcareService/independencerehab2",
        "display": "Outpatient rehabilitation services"
      }
    ],
    "telecom": [
      {
        "extension": [
          {
            "url": "http://hl7.org/fhir/uv/vhdir/StructureDefinition/contactpoint-
availabletime",
            "extension": [
              {
                "url": "daysOfWeek",
                "valueCode": "mon"
              },
              {
                "url": "daysOfWeek",
                "valueCode": "tue"
              }
            ]
          }
        ]
      }
    ]
  }
}

```

```
        "url": "daysOfWeek",
        "valueCode": "wed"
      },
      {
        "url": "daysOfWeek",
        "valueCode": "thu"
      },
      {
        "url": "daysOfWeek",
        "valueCode": "fri"
      },
      {
        "url": "availableStartTime",
        "valueTime": "08:00:00"
      },
      {
        "url": "availableEndTime",
        "valueTime": "18:00:00"
      }
    ],
    "system": "phone",
    "value": "202-109-8765",
    "use": "work"
  }
}
```

---

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# Patient

## Use Case

A member downloads a mobile application and authorizes it to access their member (patient) data on the member's behalf (so they can view it). When the member loads the patient screen in the mobile application UI, they enter a non-unique or family identifier and search for their unique Patient record. The UI calls an external endpoint, which then returns the patient data in an industry-standard format. The patient data is then translated by the mobile application for display to the member. The member now views their patient information in a user friendly way.

## Supported GET Requests

- GET [base]/Patient/[id]
- GET [base]/Patient?identifier=[system]][value]
- GET [base]/Patient?\_id=XXXX
- GET [base]/Patient?name=XXXXX&birthdate=XXX&gender=XXX (any combination)

## Changing the Data Profile of the GET Response

For the [base]/Patient/[id] read request, you can include the **X-Profile** header parameter in the request. This header parameter allows you to change the profile of the response.

For the three search requests listed below, you can change the data profile in the response using the query parameter, **\_profile**.. You can also use the header parameter; **X-Profile**. However, if you include both the **\_profile** query parameter and the **X-Profile** header parameter in a request, the **\_profile** query parameter takes precedence:

- [base]/Patient?identifier=[system]][value]
- [base]/Patient?\_id=XXXX
- [base]/Patient?name=XXXXX&birthdate=XXX&gender=XXX (any combination)

The value of **\_profile** and **X-Profile** are:

- **US Core:** <http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient>
- **CARIN BB:** <http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-patient>

The following example shows the use of the **\_profile** query parameter in one of the search requests:

```
GET /Patient?_id=pat7&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient
```

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN](#)

- [US Core](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

**[baseurl]/Patient/XXXXXX**

### CARIN BB

```
GET https://<datahub_server>/Patient/pat7

{
  "resourceType": "Bundle",
  "id": "e9bf5068-6e67-4a5c-8137-bf1eb7378627",
  "meta": {
    "lastUpdated": "2021-01-25T01:21:07.699+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Patient?_id=pat7"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Patient/pat7",
    "resource": {
      "resourceType": "Patient",
      "id": "pat7",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-09-22T16:41:12.310+00:00",
        "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-patient"]
      },
    }
  }],
}
```

```

"extension": [{
  "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
  "extension": [{
    "url": "ombCategory",
    "valueCoding": {
      "code": "1002-5",
      "display": "American Indian or Alaska Native"
    }
  }, {
    "url": "ombCategory",
    "valueCoding": {
      "code": "2028-9",
      "display": "Asian"
    }
  }, {
    "url": "text",
    "valueString": "Mixed"
  }
]
}, {
  "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
  "extension": [{
    "url": "ombCategory",
    "valueCoding": {
      "code": "2135-2",
      "display": "Hispanic or Latino"
    }
  }, {
    "url": "text",
    "valueString": "Hispanic or Latino"
  }
]
},
],
"identifier": [{
  "type": {
    "coding": [{
      "code": "MRS"
    }
  ]
},
  "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
  "value": "MR123"
}, {
  "use": "official",
  "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
  "value": "pat7"
}
],
"name": {
  "use": "official",
  "text": "John Doe",
  "family": "Doe",
  "given": ["John", "A"],
  "prefix": ["P"],
  "suffix": ["S"]
}
],
"telecom": [{
  "system": "phone",
  "value": "(712)305-0000",
  "use": "home"
}, {
  "system": "email",
  "value": "NON@NON.ORG",
  "use": "home"
}, {
  "system": "phone",
  "value": "(946)456-0000",
  "use": "work"
}
}

```





## US Core

```
GET https://<datahub_server>/Patient?_id=pat7&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient
```

```
{
  "resourceType": "Bundle",
  "id": "f70aa83c-db73-482f-aaaf-af4756cb184e",
  "meta": {
    "lastUpdated": "2021-01-25T01:18:32.202+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Patient?_id=pat7&_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%2FStructureDefinition%2Fus-core-patient"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Patient/pat7",
    "resource": {
      "resourceType": "Patient",
      "id": "pat7",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-09-22T16:41:12.310+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient"]
      },
      "extension": [{
        "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
        "extension": [{
          "url": "ombCategory",
          "valueCoding": {
            "code": "1002-5",
            "display": "American Indian or Alaska Native"
          }
        }], {
          "url": "ombCategory",
          "valueCoding": {
            "code": "2028-9",
            "display": "Asian"
          }
        }], {
          "url": "text",
          "valueString": "Mixed"
        }
      ]
    }, {
      "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
      "extension": [{
        "url": "ombCategory",
        "valueCoding": {
          "code": "2135-2",
          "display": "Hispanic or Latino"
        }
      }], {
        "url": "text",
        "valueString": "Hispanic or Latino"
      }
    }
  ]
}, {
  "identifier": [{
    "type": {
      "coding": [{
        "code": "MRS"
      }
    ]
  }
}]
}
```

```

    },
    "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
    "value": "MR123"
  }, {
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "pat7"
  }
],
"name": [{
  "use": "official",
  "text": "John Doe",
  "family": "Doe",
  "given": ["John", "A"],
  "prefix": ["P"],
  "suffix": ["S"]
}],
"telecom": [{
  "system": "phone",
  "value": "(712)305-0000",
  "use": "home"
}, {
  "system": "email",
  "value": "NON@NON.ORG",
  "use": "home"
}, {
  "system": "phone",
  "value": "(946)456-0000",
  "use": "work"
}],
"gender": "male",
"birthDate": "1950-01-01",
"address": [{
  "use": "home",
  "line": ["602 WEST", "168TH STREET"],
  "city": "Chicago",
  "district": "CHHH",
  "state": "CH",
  "postalCode": "10032",
  "country": "US"
}],
"maritalStatus": {
  "coding": [{
    "code": "M"
  }]
},
"contact": [{
  "relationship": [{
    "coding": [{
      "code": "PTH"
    }]
  }],
  "text": "N Next-of-Kin"
}],
"name": {
  "family": "Smith",
  "given": ["John"]
},
"telecom": [{
  "system": "phone",
  "value": "(712)305-1234"
}],
"address": {
  "use": "home",
  "line": ["601 WEST", "168TH STREET"],

```

```

        "city": "Chicago",
        "district": "CHHH",
        "state": "CH",
        "postalCode": "10032",
        "country": "US"
    },
    "gender": "male"
  },
  ],
  "communication": [
    {
      "language": {
        "coding": [
          {
            "code": "EN"
          }
        ]
      }
    }
  ]
}

```

## CARIN BB

GET https : //<datahub\_server>/Patient?\_id=pat7

```

{
  "resourceType": "Bundle",
  "id": "e9bf5068-6e67-4a5c-8137-bf1eb7378627",
  "meta": {
    "lastUpdated": "2021-01-25T01:21:07.699+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Patient?_id=pat7"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Patient/pat7",
      "resource": {
        "resourceType": "Patient",
        "id": "pat7",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-09-22T16:41:12.310+00:00",
          "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-patient"]
        },
        "extension": [
          {
            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
            "extension": [
              {
                "url": "ombCategory",
                "valueCoding": {
                  "code": "1002-5",
                  "display": "American Indian or Alaska Native"
                }
              },
              {
                "url": "ombCategory",
                "valueCoding": {
                  "code": "2028-9",
                  "display": "Asian"
                }
              },
              {
                "url": "text",
                "valueString": "Mixed"
              }
            ]
          }
        ]
      }
    }
  ]
}

```

```

    }
  ], {
    "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
    "extension": [{
      "url": "ombCategory",
      "valueCoding": {
        "code": "2135-2",
        "display": "Hispanic or Latino"
      }
    }, {
      "url": "text",
      "valueString": "Hispanic or Latino"
    }
  ]
}, {
  "identifier": [{
    "type": {
      "coding": [{
        "code": "MRS"
      }
    ]
  }, {
    "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
    "value": "MR123"
  }, {
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "pat7"
  }
], {
  "name": [{
    "use": "official",
    "text": "John Doe",
    "family": "Doe",
    "given": ["John", "A"],
    "prefix": ["P"],
    "suffix": ["S"]
  }
], {
  "telecom": [{
    "system": "phone",
    "value": "(712)305-0000",
    "use": "home"
  }, {
    "system": "email",
    "value": "NON@NON.ORG",
    "use": "home"
  }, {
    "system": "phone",
    "value": "(946)456-0000",
    "use": "work"
  }
],
  "gender": "male",
  "birthDate": "1950-01-01",
  "address": [{
    "use": "home",
    "line": ["602 WEST", "168TH STREET"],
    "city": "Chicago",
    "district": "CHHH",
    "state": "CH",
    "postalCode": "10032",
    "country": "US"
  }
],
  "maritalStatus": {
    "coding": [{
      "code": "M"
    }
  ]
}

```



```

        "url": "https://<datahub_server>/Patient?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%
2FStructureDefinition%2Fus-core-patient&identifier=http%3A%2F%2Fterminology.hl7.org%2FCodeSystem%2FNYU%
3Atenant1%7CMR123"
      }, {
        "relation": "next",
        "url": "https://<datahub_server>?_getpages=173a37f7-9396-5f7c-a1c9-
0ea119a8a33e&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
      }
    ],
    "entry": [{
      "fullUrl": "https://<datahub_server>/Patient/8d937131-a44a-4547-b76d-f801e8463f8c",
      "resource": {
        "resourceType": "Patient",
        "id": "8d937131-a44a-4547-b76d-f801e8463f8c",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-08-27T21:01:44.023+00:00",
          "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient"]
        },
        "extension": [{
          "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
          "extension": [{
            "url": "ombCategory",
            "valueCoding": {
              "code": "1002-5",
              "display": "American Indian or Alaska Native"
            }
          }, {
            "url": "ombCategory",
            "valueCoding": {
              "code": "2028-9",
              "display": "Asian"
            }
          }, {
            "url": "text",
            "valueString": "Mixed"
          }
        ]
      }, {
        "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
        "extension": [{
          "url": "ombCategory",
          "valueCoding": {
            "code": "2135-2",
            "display": "Hispanic or Latino"
          }
        }, {
          "url": "text",
          "valueString": "Hispanic or Latino"
        }
      ]
    }
  ],
  "identifier": [{
    "type": {
      "coding": [{
        "code": "MR"
      }
    ]
  },
  "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
  "value": "MR123"
}, {
  "use": "official",
  "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
  "value": "8d937131-a44a-4547-b76d-f801e8463f8c"
},
  "name": [{
    "use": "official",
    "text": "John Doe",

```

```
        "family": "Doe",
        "given": ["John", "A"],
        "prefix": ["P"],
        "suffix": ["S"]
      }
    ],
    "telecom": [{
      "system": "phone",
      "value": "(712)305-0000",
      "use": "home"
    }, {
      "system": "email",
      "value": "NON@NON.ORG",
      "use": "home"
    }, {
      "system": "phone",
      "value": "(946)456-0000",
      "use": "work"
    }
  ],
  "gender": "male",
  "birthDate": "1950-01-01",
  "address": [{
    "use": "home",
    "line": ["602 WEST", "168TH STREET"],
    "city": "Chicago",
    "district": "CHHH",
    "state": "CH",
    "postalCode": "10032",
    "country": "US"
  }
],
  "maritalStatus": {
    "coding": [{
      "code": "M"
    }
  ]
},
  "contact": [{
    "relationship": [{
      "coding": [{
        "code": "FTH"
      }
      ],
      "text": "N Next-of-Kin"
    }
  ],
    "name": {
      "family": "Smith",
      "given": ["John"]
    },
    "telecom": [{
      "system": "phone",
      "value": "(712)305-1234"
    }
  ],
    "address": {
      "use": "home",
      "line": ["601 WEST", "168TH STREET"],
      "city": "Chicago",
      "district": "CHHH",
      "state": "CH",
      "postalCode": "10032",
      "country": "US"
    },
    "gender": "male"
  }
],
  "communication": [{
    "language": {
      "coding": [{
```



```

        "code": "EN"
      }
    ]
  }, {
    "fullUrl": "https://<datahub_server>/Patient/0308ccd4-eb6c-4927-809d-4386db19fca0",
    "resource": {
      "resourceType": "Patient",
      "id": "0308ccd4-eb6c-4927-809d-4386db19fca0",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-08-27T21:01:44.070+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient"]
      },
      "extension": [
        {
          "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
          "extension": [
            {
              "url": "ombCategory",
              "valueCoding": {
                "code": "1002-5",
                "display": "American Indian or Alaska Native"
              }
            },
            {
              "url": "ombCategory",
              "valueCoding": {
                "code": "2028-9",
                "display": "Asian"
              }
            },
            {
              "url": "text",
              "valueString": "Mixed"
            }
          ]
        },
        {
          "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
          "extension": [
            {
              "url": "ombCategory",
              "valueCoding": {
                "code": "2135-2",
                "display": "Hispanic or Latino"
              }
            }
          ]
        }
      ]
    },
    "identifier": [
      {
        "type": {
          "coding": [
            {
              "code": "MRS"
            }
          ]
        },
        "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
        "value": "MR123"
      },
      {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "0308ccd4-eb6c-4927-809d-4386db19fca0"
      }
    ],
    "name": [
      {
        "use": "official",
        "text": "John Doe",
        "family": "Doe",
        "given": ["John", "A"],
        "prefix": ["P"],
        "suffix": ["S"]
      }
    ]
  }
}

```



```

    }
  }
}

```

## CARIN BB

```

GET https://<datahub_server>/Patient?identifier=http://terminology.hl7.org/CodeSystem/NYU:
tenant1|MR123&_profile="http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-patient"

{
  "resourceType": "Bundle",
  "id": "3a0b2719-5b44-4de2-8b6b-ebe4273ccc3c",
  "meta": {
    "lastUpdated": "2021-01-25T01:25:11.741+00:00"
  },
  "type": "searchset",
  "total": 4,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Patient?identifier=http%3A%2F%2Fterminology.hl7.org%
2FCodeSystem%2FNFYU%3Atenant1%7CMR123"
    }, {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=551e5550-0f60-57c0-b6dc-
2bba48d6a166&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Patient/8d937131-a44a-4547-b76d-f801e8463f8c",
      "resource": {
        "resourceType": "Patient",
        "id": "8d937131-a44a-4547-b76d-f801e8463f8c",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2020-08-27T21:01:44.023+00:00",
          "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-patient"]
        },
        "extension": [
          {
            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
            "extension": [
              {
                "url": "ombCategory",
                "valueCoding": {
                  "code": "1002-5",
                  "display": "American Indian or Alaska Native"
                }
              }, {
                "url": "ombCategory",
                "valueCoding": {
                  "code": "2028-9",
                  "display": "Asian"
                }
              }, {
                "url": "text",
                "valueString": "Mixed"
              }
            ]
          }, {
            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
            "extension": [
              {
                "url": "ombCategory",
                "valueCoding": {
                  "code": "2135-2",
                  "display": "Hispanic or Latino"
                }
              }
            ]
          }
        ]
      }
    }
  ]
}

```

```

        "url": "text",
        "valueString": "Hispanic or Latino"
      }
    ]
  },
  "identifier": [{
    "type": {
      "coding": [{
        "code": "MR"
      }
    ]
  },
  "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
  "value": "MR123"
}, {
  "use": "official",
  "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
  "value": "8d937131-a44a-4547-b76d-f801e8463f8c"
}],
  "name": [{
    "use": "official",
    "text": "John Doe",
    "family": "Doe",
    "given": ["John", "A"],
    "prefix": ["P"],
    "suffix": ["S"]
  }
],
  "telecom": [{
    "system": "phone",
    "value": "(712)305-0000",
    "use": "home"
  }, {
    "system": "email",
    "value": "NON@NON.ORG",
    "use": "home"
  }, {
    "system": "phone",
    "value": "(946)456-0000",
    "use": "work"
  }
],
  "gender": "male",
  "birthDate": "1950-01-01",
  "address": [{
    "use": "home",
    "line": ["602 WEST", "168TH STREET"],
    "city": "Chicago",
    "district": "CHHH",
    "state": "CH",
    "postalCode": "10032",
    "country": "US"
  }
],
  "maritalStatus": {
    "coding": [{
      "code": "M"
    }
  ]
},
  "contact": [{
    "relationship": [{
      "coding": [{
        "code": "FTH"
      }
    ]
  },
  "text": "N Next-of-Kin"
}],
]

```



```

],
"identifier": [{
  "type": {
    "coding": [{
      "code": "MRS"
    }
  ]
},
"system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
"value": "MR123"
}, {
  "use": "official",
  "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
  "value": "0308ccd4-eb6c-4927-809d-4386db19fca0"
}
],
"name": [{
  "use": "official",
  "text": "John Doe",
  "family": "Doe",
  "given": ["John", "A"],
  "prefix": ["P"],
  "suffix": ["S"]
}
],
"telecom": [{
  "system": "phone",
  "value": "(712)305-0000",
  "use": "home"
}, {
  "system": "email",
  "value": "NON@NON.ORG",
  "use": "home"
}, {
  "system": "phone",
  "value": "(946)456-0000",
  "use": "work"
}
],
"gender": "male",
"birthDate": "1950-01-01",
"address": [{
  "use": "home",
  "line": ["602 WEST", "168TH STREET"],
  "city": "Chicago",
  "district": "CHHH",
  "state": "CH",
  "postalCode": "10032",
  "country": "US"
}
],
"maritalStatus": {
  "coding": [{
    "code": "M"
  }
]
},
"contact": [{
  "relationship": [{
    "coding": [{
      "code": "FTH"
    }
  ]
},
"text": "N Next-of-Kin"
},
"name": {
  "family": "Smith",
  "given": ["John"]
},
"telecom": [{

```

```

        "system": "phone",
        "value": "(712)305-1234"
      },
    ],
    "address": {
      "use": "home",
      "line": ["601 WEST", "168TH STREET"],
      "city": "Chicago",
      "district": "CHHH",
      "state": "CH",
      "postalCode": "10032",
      "country": "US"
    },
    "gender": "male"
  },
  "communication": [
    {
      "language": {
        "coding": [
          {
            "code": "EN"
          }
        ]
      }
    }
  ]
}

```

**[base] / Patient ? name = XXXXX & birthdate = XXX & gender = XXX(any combination)**

### US Core

[base] / Patient ? name = XXXXX & birthdate = XXX & gender = XXX(any combination)

GET https://<datahub\_server>/Patient?name=John&birthdate=1950-01-01&gender=male&\_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient

```

{
  "resourceType": "Bundle",
  "id": "096639f5-03db-45e9-bb88-b1b21545f689",
  "meta": {
    "lastUpdated": "2021-01-25T01:27:41.623+00:00"
  },
  "type": "searchset",
  "total": 4,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/Patient?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%2FStructureDefinition%2Fus-core-patient&birthdate=1950-01-01&gender=male&name=John"
    },
    {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=b2d45d4f-b9d6-5ef4-9bc6-71c95e925272&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/Patient/8d937131-a44a-4547-b76d-f801e8463f8c",
      "resource": {
        "resourceType": "Patient",
        "id": "8d937131-a44a-4547-b76d-f801e8463f8c",

```

```

"meta": {
  "versionId": "1",
  "lastUpdated": "2020-08-27T21:01:44.023+00:00",
  "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient"]
},
"extension": [{
  "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
  "extension": [{
    "url": "ombCategory",
    "valueCoding": {
      "code": "1002-5",
      "display": "American Indian or Alaska Native"
    }
  }, {
    "url": "ombCategory",
    "valueCoding": {
      "code": "2028-9",
      "display": "Asian"
    }
  }, {
    "url": "text",
    "valueString": "Mixed"
  }
  ],
  {
    "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
    "extension": [{
      "url": "ombCategory",
      "valueCoding": {
        "code": "2135-2",
        "display": "Hispanic or Latino"
      }
    }, {
      "url": "text",
      "valueString": "Hispanic or Latino"
    }
  ]
}],
"identifier": [{
  "type": {
    "coding": [{
      "code": "MR"
    }
  ],
  "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
  "value": "MR123"
}, {
  "use": "official",
  "system": "com.cognizant.transform.fhir.identifiers.logical-identifier",
  "value": "8d937131-a44a-4547-b76d-f801e8463f8c"
}],
"name": [{
  "use": "official",
  "text": "John Doe",
  "family": "Doe",
  "given": ["John", "A"],
  "prefix": ["P"],
  "suffix": ["S"]
}],
"telecom": [{
  "system": "phone",
  "value": "(712)305-0000",
  "use": "home"
}, {
  "system": "email",
  "value": "NON@NON.ORG",
  "use": "home"
}

```



```

    }, {
      "system": "phone",
      "value": "(946)456-0000",
      "use": "work"
    }
  ],
  "gender": "male",
  "birthDate": "1950-01-01",
  "address": [{
    "use": "home",
    "line": ["602 WEST", "168TH STREET"],
    "city": "Chicago",
    "district": "CHHH",
    "state": "CH",
    "postalCode": "10032",
    "country": "US"
  }
  ],
  "maritalStatus": {
    "coding": [{
      "code": "M"
    }]
  },
  "contact": [{
    "relationship": [{
      "coding": [{
        "code": "FTH"
      }]
    }],
    "text": "N Next-of-Kin"
  }],
  "name": {
    "family": "Smith",
    "given": ["John"]
  },
  "telecom": [{
    "system": "phone",
    "value": "(712)305-1234"
  }],
  "address": {
    "use": "home",
    "line": ["601 WEST", "168TH STREET"],
    "city": "Chicago",
    "district": "CHHH",
    "state": "CH",
    "postalCode": "10032",
    "country": "US"
  },
  "gender": "male"
},
],
"communication": [{
  "language": {
    "coding": [{
      "code": "EN"
    }]
  }
}]
}, {
  "fullUrl": "https://<datahub_server>/Patient/0308ccd4-eb6c-4927-809d-4386db19fca0",
  "resource": {
    "resourceType": "Patient",
    "id": "0308ccd4-eb6c-4927-809d-4386db19fca0",
    "meta": {
      "versionId": "1",

```

```

      "lastUpdated": "2020-08-27T21:01:44.070+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient"]
    },
    "extension": [{
      "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
      "extension": [{
        "url": "ombCategory",
        "valueCoding": {
          "code": "1002-5",
          "display": "American Indian or Alaska Native"
        }
      }, {
        "url": "ombCategory",
        "valueCoding": {
          "code": "2028-9",
          "display": "Asian"
        }
      }, {
        "url": "text",
        "valueString": "Mixed"
      }
    ]
  }, {
    "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
    "extension": [{
      "url": "ombCategory",
      "valueCoding": {
        "code": "2135-2",
        "display": "Hispanic or Latino"
      }
    ]
  }
],
"identifier": [{
  "type": {
    "coding": [{
      "code": "MRS"
    ]
  },
  "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
  "value": "MR123"
}, {
  "use": "official",
  "system": "com.cognizant.transform.fhir.identifiers.logical-identifier",
  "value": "0308ccd4-eb6c-4927-809d-4386db19fca0"
}
],
"name": [{
  "use": "official",
  "text": "John Doe",
  "family": "Doe",
  "given": ["John", "A"],
  "prefix": ["P"],
  "suffix": ["S"]
}
],
"telecom": [{
  "system": "phone",
  "value": "(712)305-0000",
  "use": "home"
}, {
  "system": "email",
  "value": "NON@NON.ORG",
  "use": "home"
}, {
  "system": "phone",
  "value": "(946)456-0000",
  "use": "work"
}
]
}

```



```
GET /Patient?name=John&birthdate=1950-01-01&gender=male&_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-patient
```

```
{
  "resourceType": "Bundle",
  "id": "c86d589e-32f7-460f-b716-a5352eb2b000",
  "meta": {
    "lastUpdated": "2021-01-25T01:26:34.493+00:00"
  },
  "type": "searchset",
  "total": 4,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Patient?birthdate=1950-01-01&gender=male&name=John"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=bc25fd99-3399-52e5-a185-7cc152373293&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Patient/8d937131-a44a-4547-b76d-f801e8463f8c",
    "resource": {
      "resourceType": "Patient",
      "id": "8d937131-a44a-4547-b76d-f801e8463f8c",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-08-27T21:01:44.023+00:00",
        "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-patient"]
      },
      "extension": [{
        "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
        "extension": [{
          "url": "ombCategory",
          "valueCoding": {
            "code": "1002-5",
            "display": "American Indian or Alaska Native"
          }
        }, {
          "url": "ombCategory",
          "valueCoding": {
            "code": "2028-9",
            "display": "Asian"
          }
        }, {
          "url": "text",
          "valueString": "Mixed"
        }
      ]
    }, {
      "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
      "extension": [{
        "url": "ombCategory",
        "valueCoding": {
          "code": "2135-2",
          "display": "Hispanic or Latino"
        }
      }, {
        "url": "text",
        "valueString": "Hispanic or Latino"
      }
    }
  ]
}, {
  "identifier": [{
    "type": {
      "coding": [{
        "code": "MR"
      }
    ]
  }
}]
}
```

```

    },
    "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
    "value": "MR123"
  }, {
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "8d937131-a44a-4547-b76d-f801e8463f8c"
  }
],
"name": [{
  "use": "official",
  "text": "John Doe",
  "family": "Doe",
  "given": ["John", "A"],
  "prefix": ["P"],
  "suffix": ["S"]
}],
"telecom": [{
  "system": "phone",
  "value": "(712)305-0000",
  "use": "home"
}, {
  "system": "email",
  "value": "NON@NON.ORG",
  "use": "home"
}, {
  "system": "phone",
  "value": "(946)456-0000",
  "use": "work"
}],
"gender": "male",
"birthDate": "1950-01-01",
"address": [{
  "use": "home",
  "line": ["602 WEST", "168TH STREET"],
  "city": "Chicago",
  "district": "CHHH",
  "state": "CH",
  "postalCode": "10032",
  "country": "US"
}],
"maritalStatus": {
  "coding": [{
    "code": "M"
  }]
},
"contact": [{
  "relationship": [{
    "coding": [{
      "code": "PTH"
    }]
  }],
  "text": "N Next-of-Kin"
}],
"name": {
  "family": "Smith",
  "given": ["John"]
},
"telecom": [{
  "system": "phone",
  "value": "(712)305-1234"
}],
"address": {
  "use": "home",
  "line": ["601 WEST", "168TH STREET"],

```

```

        "city": "Chicago",
        "district": "CHHH",
        "state": "CH",
        "postalCode": "10032",
        "country": "US"
    },
    "gender": "male"
  },
  ],
  "communication": [
    {
      "language": {
        "coding": [
          {
            "code": "EN"
          }
        ]
      }
    }
  ]
}, {
  "fullUrl": "https://<datahub_server>/Patient/0308ccd4-eb6c-4927-809d-4386db19fca0",
  "resource": {
    "resourceType": "Patient",
    "id": "0308ccd4-eb6c-4927-809d-4386db19fca0",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-08-27T21:01:44.070+00:00",
      "profile": ["http://hl7.org/fhir/us/car/StructureDefinition/car-in-bb-patient"]
    },
    "extension": [
      {
        "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
        "extension": [
          {
            "url": "ombCategory",
            "valueCoding": {
              "code": "1002-5",
              "display": "American Indian or Alaska Native"
            }
          },
          {
            "url": "ombCategory",
            "valueCoding": {
              "code": "2028-9",
              "display": "Asian"
            }
          },
          {
            "url": "text",
            "valueString": "Mixed"
          }
        ]
      },
      {
        "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity",
        "extension": [
          {
            "url": "ombCategory",
            "valueCoding": {
              "code": "2135-2",
              "display": "Hispanic or Latino"
            }
          }
        ]
      }
    ]
  },
  "identifier": [
    {
      "type": {
        "coding": [
          {
            "code": "MRS"
          }
        ]
      },
      "system": "http://terminology.hl7.org/CodeSystem/NYU:tenant1",
      "value": "MR123"
    },
    {
      "use": "official",

```

```

        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "0308ccd4-eb6c-4927-809d-4386db19fca0"
    },
    ],
    "name": [{
        "use": "official",
        "text": "John Doe",
        "family": "Doe",
        "given": ["John", "A"],
        "prefix": ["P"],
        "suffix": ["S"]
    }
    ],
    "telecom": [{
        "system": "phone",
        "value": "(712)305-0000",
        "use": "home"
    }, {
        "system": "email",
        "value": "NON@NON.ORG",
        "use": "home"
    }, {
        "system": "phone",
        "value": "(946)456-0000",
        "use": "work"
    }
    ],
    "gender": "male",
    "birthDate": "1950-01-01",
    "address": [{
        "use": "home",
        "line": ["602 WEST", "168TH STREET"],
        "city": "Chicago",
        "district": "CHHH",
        "state": "CH",
        "postalCode": "10032",
        "country": "US"
    }
    ],
    "maritalStatus": {
        "coding": [{
            "code": "M"
        }
        ]
    },
    "contact": [{
        "relationship": [{
            "coding": [{
                "code": "FTH"
            }
            ],
            "text": "N Next-of-Kin"
        }
        ],
        "name": {
            "family": "Smith",
            "given": ["John"]
        },
        "telecom": [{
            "system": "phone",
            "value": "(712)305-1234"
        }
        ],
        "address": {
            "use": "home",
            "line": ["601 WEST", "168TH STREET"],
            "city": "Chicago",
            "district": "CHHH",
            "state": "CH",
            "postalCode": "10032",
            "country": "US"
        }
    }
    ]
}

```

```
    },  
    "gender": "male"  
  },  
  ],  
  "communication": [{  
    "language": {  
      "coding": [{  
        "code": "EN"  
      }]  
    }  
  }]  
}
```

---

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# Practitioner

## Use Case

A member downloads a mobile application which can help search for information about a Practitioner's affiliation to other Facilities. The application accepts a member's input of Practitioner ID, and calls the Practitioner search resource. If Practitioner ID is not known, the mobile application implements the Practitioner Search to help locate the practitioner ID to search for Facility Affiliations. In the TriZetto Connected Interoperability Solution, that call retrieves the bundle of Provider data and returns it in the industry-standard format. The list of Practitioners and their affiliations matching the input search criteria is then formatted for display in the mobile application. The member now views a list of practitioners and their affiliations in a user friendly way.

## Supported Query Parameters

**Availability:** 5.90.001.000

These query parameters can be sent in any combination.

### Query Parameters

Query Parameter	Type	Description
<a href="#">telecom-available-days</a>	token <sup>1</sup>	Days available
<a href="#">telecom-available-end-time</a>	token	End time
<a href="#">telecom-available-start-time</a>	token	Start time
<a href="#">endpoint</a>	reference	Select Practitioners with the specified endpoint
<a href="#">family</a>	string	Select Practitioners with the specified family name
<a href="#">given</a>	string	Select Practitioners with the specified given name
<a href="#">identifier-assigner</a>	reference	Select Practitioners with an identifier issued by the specified organization
<a href="#">identifier</a>	token	Select Practitioners with the specified identifier
<a href="#">name</a>	string	Select Practitioners with the specified name (matches against any of the elements in the HumanName data type)
<a href="#">phonetic</a>	string	Select Practitioners with the specified name (A portion of name using some kind of phonetic matching algorithm)
<a href="#">qualification-code</a>	token	Select Practitioners with a type of qualification matching the specified code

<a href="#">qualification-issuer</a>	reference	Select Practitioners with a qualification issued by the specified organization
<a href="#">qualification-period</a>	date	Select Practitioners that have a qualification relevant to the date provided
<a href="#">qualification-status</a>	token	Select Practitioners with a qualification status matching the specified code
<a href="#">qualification-wherevalid-code</a>	token	Select Practitioners with a qualification that is valid at the location indicated by the specified code
<a href="#">qualification-wherevalid-location</a>	reference	Select Practitioners with a qualification that is valid at the specified location
<a href="#">via-intermediary</a>	reference	Select Practitioners with contact information available through the specified intermediary

1. A token refers to either [system][value] or [value]. Refer to <https://www.hl7.org/fhir/search.html#token> where the code is the Identifier.value.

## Sample GET Requests

- GET [base]/Practitioner/[id]
- GET [base]/Practitioner?name=XXXX
- GET [base]/Practitioner?identifier=[system][value]

## Changing the Data Profile of the GET Response

For the [base]/Practitioner/[id] read request, you can include the **X-Profile** header parameter in the request. This header parameter allows you to change the profile of the response.

For the two search requests listed below, you can change the data profile in the response using the query parameter, **\_profile**. You can also use the header parameter; **X-Profile**. However, if you include both the **\_profile** query parameter and the **X-Profile** header parameter in a request, the **\_profile** query parameter takes precedence:

- [base]/Practitioner?name=XXXX
- [base]/Practitioner?identifier=[system][value]

The value of **\_profile** and **X-Profile** are the following.

- **US Core:** <http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner>
- **Da Vinci PDEX Plan Net:** <http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Practitioner>

The following example shows the use of the **\_profile** query parameter in one of the search requests:

```
GET /Practitioner?identifier=http://www.acme.org/practitioners|25456&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner
```

## Response parameters

The response parameters for the GET method are as follows:

- [US Core](#)
- [Da Vinci](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

### [base]/Practitioner/XXXX

#### US Core sample request and response

```
GET /Practitioner/1020000080

{
  "resourceType": "Practitioner",
  "id": "1020000080",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2020-09-25T12:02:21.861+00:00",
    "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
  },
  "identifier": [{
    "use": "official",
    "type": {
      "coding": [{
        "code": "NPI",
```

```

        "display": "National Provider ID",
        "userSelected": true
      }
    ],
    "text": "National Provider ID"
  },
  "system": "http://hl7.org/fhir/sid/us-npi",
  "value": "1020000080",
  "assigner": {
    "display": "Govt"
  }
}, {
  "use": "official",
  "type": {
    "coding": [{
      "code": "TAX",
      "display": "Federal tax ID",
      "userSelected": true
    }]
  },
  "text": "Federal tax ID"
},
"system": "clinical:tenant4",
"value": "587654321",
"assigner": {
  "display": "Govt"
}
}, {
  "use": "official",
  "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
  "value": "1020000080"
}
],
"active": true,
"name": [{
  "use": "official",
  "text": "MFIRST LMLAST",
  "family": "MLAST",
  "given": ["MFIRST", "L"],
  "suffix": ["MD"]
}
],
"telecom": [{
  "system": "phone",
  "value": "4343926650",
  "use": "work"
}, {
  "system": "fax",
  "value": "4343928783",
  "use": "work"
}
],
"address": [{
  "use": "work",
  "text": "234 SEAWAY ST, MIA FL 33111 ",
  "line": ["234 SEAWAY ST"],
  "city": "MIA",
  "state": "FL",
  "postalCode": "33111"
}, {
  "use": "billing",
  "text": "2345 OCEAN BLVD, MAIMI FL 44111 ",
  "line": ["2345 OCEAN BLVD"],
  "city": "MAIMI",
  "state": "FL",
  "postalCode": "44111"
}
],
"qualification": [{
  "identifier": [{
    "use": "official",

```

```

        "type": {
          "coding": [{
            "code": "reg",
            "display": "registration",
            "userSelected": true
          }
        ],
        "text": "registration"
      }
    ],
    "code": {
      "coding": [{
        "code": "0B",
        "display": "State License Number",
        "userSelected": true
      }
    ],
    "text": "State License Number"
  }
}

```

**[base]/Practitioner?name=XXXX**

### US Core sample request and response

```

GET /Practitioner?name=Bone&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner

{
  "resourceType": "Bundle",
  "id": "e0a4118a-7459-4614-aced-59e8bcb2cf17",
  "meta": {
    "lastUpdated": "2021-01-22T23:58:19.554+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Practitioner?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%2FStructureDefinition%2Fus-core-practitioner&name=Bone"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Practitioner/434394394",
    "resource": {
      "resourceType": "Practitioner",
      "id": "434394394",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
      },
      "identifier": [{
        "system": "http://hl7.org/fhir/sid/us-npi",
        "value": "9941339108"
      }, {
        "system": "http://www.acme.org/practitioners",

```

```

        "value": "25456"
      },
    ],
    "name": [{
      "family": "Bone",
      "given": ["Ronald"],
      "prefix": ["Dr"]
    }],
    "address": [{
      "use": "home",
      "line": ["1003 Healthcare Drive"],
      "city": "Amherst",
      "state": "MA",
      "postalCode": "01002"
    }],
  }, {
    "fullUrl": "https://<datahub_server>/Practitioner/Practitioner01",
    "resource": {
      "resourceType": "Practitioner",
      "id": "Practitioner01",
      "meta": {
        "versionId": "0",
        "lastUpdated": "2021-01-09T11:08:53.100+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"],
        "tag": [{
          "system": "http://terminology.hl7.org/CodeSystem/common-tags",
          "code": "user-request-id",
          "display": "a463a402-69f9-41b7-bbe6-91105ddece87\t\t\t1"
        }]
      }
    }
  },
  "text": {
    "status": "generated",
    "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: id: 9941339108, id: 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
  },
  "identifier": [{
    "system": "http://hl7.org/fhir/sid/us-mpi",
    "value": "9941339108"
  }, {
    "system": "http://www.acme.org/practitioners",
    "value": "25456"
  }, {
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "Practitioner01"
  }],
  "name": [{
    "family": "Bone",
    "given": ["Ronald"],
    "prefix": ["Dr"]
  }],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }],
}

```

## CARIN BB Sample request and response

```
[base] / Practitioner ? name = XXXX

GET /Practitioner?name=Bone&_profile=http://hl7.org/fhir/us/carin-bb/StructureDefinition/CARIN-BB-Practitioner

{
  "resourceType": "Bundle",
  "id": "7c78fe38-2178-4e33-a0f7-90898f182ff4",
  "meta": {
    "lastUpdated": "2021-01-23T00:36:16.436+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Practitioner?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin-bb%2FStructureDefinition%2FCARIN-BB-Practitioner&name=Bone"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Practitioner/434394394",
    "resource": {
      "resourceType": "Practitioner",
      "id": "434394394",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/carin-bb/StructureDefinition/CARIN-BB-Practitioner"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
      },
      "identifier": [{
        "system": "http://hl7.org.fhir/sid/us-npi",
        "value": "9941339108"
      }, {
        "system": "http://www.acme.org/practitioners",
        "value": "25456"
      }
    ],
    "name": [{
      "family": "Bone",
      "given": ["Ronald"],
      "prefix": ["Dr"]
    }
  ],
    "address": [{
      "use": "home",
      "line": ["1003 Healthcare Drive"],
      "city": "Amherst",
      "state": "MA",
      "postalCode": "01002"
    }
  ]
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/Practitioner01",
  "resource": {
    "resourceType": "Practitioner",
    "id": "Practitioner01",
    "meta": {
      "versionId": "0",
      "lastUpdated": "2021-01-09T11:08:53.100+00:00",

```

```

        "profile": ["http://hl7.org/fhir/us/carin-bb/StructureDefinition/CARIN-BB-Practitioner"],
        "tag": [{
            "system": "http://terminology.hl7.org/CodeSystem/common-tags",
            "code": "user-request-id",
            "display": "a463a402-69f9-41b7-bbe6-91105ddece87\t\t\t1"
        }
    ],
    "text": {
        "status": "generated",
        "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\\"><p><b>Generated Narrative</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: id: 9941339108, id: 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
    },
    "identifier": [{
        "system": "http://hl7.org/fhir/sid/us-npi",
        "value": "9941339108"
    }, {
        "system": "http://www.acme.org/practitioners",
        "value": "25456"
    }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "Practitioner01"
    }
    ],
    "name": [{
        "family": "Bone",
        "given": ["Ronald"],
        "prefix": ["Dr"]
    }
    ],
    "address": [{
        "use": "home",
        "line": ["1003 Healthcare Drive"],
        "city": "Amherst",
        "state": "MA",
        "postalCode": "01002"
    }
    ]
}

```

## DaVinci PDEX Plan Net sample request and response

```

[base] / Practitioner ? name = XXXX

GET /Practitioner?name=Bone&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Practitioner

{
  "resourceType": "Bundle",
  "id": "e171a0df-2efc-4ddf-a2f5-63f0738125e8",
  "meta": {
    "lastUpdated": "2021-01-23T00:42:14.306+00:00"
  },
  "type": "searchset",
  "total": 2,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Practitioner?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-Practitioner&name=Bone"
  }
}

```



```

    ],
    "entry": [{
      "fullUrl": "https://<datahub_server>/Practitioner/434394394",
      "resource": {
        "resourceType": "Practitioner",
        "id": "434394394",
        "meta": {
          "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Practitioner"]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
        },
        "identifier": [{
          "system": "http://hl7.org.fhir/sid/us-npi",
          "value": "9941339108"
        }, {
          "system": "http://www.acme.org/practitioners",
          "value": "25456"
        }
      ],
      "name": [{
        "family": "Bone",
        "given": ["Ronald"],
        "prefix": ["Dr"]
      }
    ],
    "address": [{
      "use": "home",
      "line": ["1003 Healthcare Drive"],
      "city": "Amherst",
      "state": "MA",
      "postalCode": "01002"
    }
  ]
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/Practitioner01",
  "resource": {
    "resourceType": "Practitioner",
    "id": "Practitioner01",
    "meta": {
      "versionId": "0",
      "lastUpdated": "2021-01-09T11:08:53.100+00:00",
      "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Practitioner"],
      "tag": [{
        "system": "http://terminology.hl7.org/CodeSystem/common-tags",
        "code": "user-request-id",
        "display": "a463a402-69f9-41b7-bbe6-91105ddece87\t\t\t1"
      }
    ],
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: id: 9941339108, id: 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
    },
    "identifier": [{
      "system": "http://hl7.org.fhir/sid/us-npi",
      "value": "9941339108"
    }, {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ], {

```

```

        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "Practitioner01"
      }
    ],
    "name": [{
      "family": "Bone",
      "given": ["Ronald"],
      "prefix": ["Dr"]
    }
  ],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
  ]
}
}
}
}
}
}

```

**[base]/Practitioner?identifier=[system][value]**

### US Core sample request and response

```

[base] / Practitioner ? identifier = [system] | [value]

GET /Practitioner?identifier=http://www.acme.org/practitioners|25456&_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner

{
  "resourceType": "Bundle",
  "id": "d3a4ea73-0fa8-4699-ba25-063136ba3f86",
  "meta": {
    "lastUpdated": "2021-01-22T23:54:18.322+00:00"
  },
  "type": "searchset",
  "total": 8,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Practitioner?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcore%2FStructureDefinition%2Fus-core-practitioner&identifier=http%3A%2F%2Fwww.acme.org%2Fpractitioners%7C25456"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=8578d765-5418-50e4-9982-5adf984e6d67&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Practitioner/434394394",
    "resource": {
      "resourceType": "Practitioner",
      "id": "434394394",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='\"http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
      }
    }
  ]
}

```

```
/div>"
    },
    "identifier": [ {
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "9941339108"
    }, {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [ {
    "family": "Bone",
    "given": ["Ronald"],
    "prefix": ["Dr"]
  }
  ],
  "address": [ {
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
  ],
  "fullUrl": "https://<datahub_server>/Practitioner/4546487987",
  "resource": {
    "resourceType": "Practitioner",
    "id": "4546487987",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\\"\><p><b>Generated Narrative with  

Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456<  

/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><  

/div>"
    }
  },
  "identifier": [ {
    "system": "http://hl7.org/fhir/sid/us-npi",
    "value": "9941339108"
  }, {
    "system": "http://www.acme.org/practitioners",
    "value": "25456"
  }
  ],
  "name": [ {
    "family": "John",
    "given": ["Ronald"],
    "prefix": ["Dr"]
  }
  ],
  "address": [ {
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
  ],
  ],
},
],
},
},
},
}
```

## CARIN BB Sample request and response

```
[base] / Practitioner ? identifier = [system] | [value]
```

```
GET /Practitioner?identifier=http://www.acme.org/practitioners|25456&_profile=http://hl7.org/fhir/us/carin-bb/StructureDefinition/CARIN-BB-Practitioner
```

```
{
  "resourceType": "Bundle",
  "id": "772b3ba2-322b-49fc-baee-fa8e4225d095",
  "meta": {
    "lastUpdated": "2021-01-23T00:37:58.316+00:00"
  },
  "type": "searchset",
  "total": 8,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Practitioner?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin-bb%2FStructureDefinition%2FCARIN-BB-Practitioner&identifier=http%3A%2F%2Fwww.acme.org%2Fpractitioners%7C25456"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=24d37cb6-4840-5a9a-b29c-9d546a03eb86&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Practitioner/434394394",
    "resource": {
      "resourceType": "Practitioner",
      "id": "434394394",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/carin-bb/StructureDefinition/CARIN-BB-Practitioner"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
      },
      "identifier": [{
        "system": "http://hl7.org/fhir/sid/us-npi",
        "value": "9941339108"
      }, {
        "system": "http://www.acme.org/practitioners",
        "value": "25456"
      }
    ],
    "name": [{
      "family": "Bone",
      "given": ["Ronald"],
      "prefix": ["Dr"]
    }
  ],
    "address": [{
      "use": "home",
      "line": ["1003 Healthcare Drive"],
      "city": "Amherst",
      "state": "MA",
      "postalCode": "01002"
    }
  ]
  }, {
    "fullUrl": "https://<datahub_server>/Practitioner/4546487987",
    "resource": {
      "resourceType": "Practitioner",
      "id": "4546487987",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/carin-bb/StructureDefinition/CARIN-BB-Practitioner"]
      }
    }
  }
  ],
}
```

```
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
    },
    "identifier": [{
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "9941339108"
    }, {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [{
    "family": "John",
    "given": ["Ronald"],
    "prefix": ["Dr"]
  }
],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
]
}
```

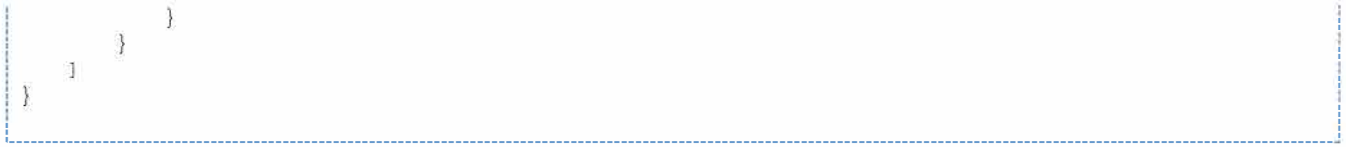
## DaVinci PDEX Plan Net sample request and response

```
[base] / Practitioner ? identifier = [system] | [value]
GET /Practitioner?identifier=http://www.acme.org/practitioners|25456&_profile=http://hl7.org/fhir/us
/davinci-pdex-plan-net/StructureDefinition/plannet-Practitioner

{
  "resourceType": "Bundle",
  "id": "7b5blca0-de57-4a4c-9f52-8cced284d705",
  "meta": {
    "lastUpdated": "2021-01-23T00:42:11.230+00:00"
  },
  "type": "searchset",
  "total": 8,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Practitioner?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%
2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-Practitioner&identifier=http%3A%2F%2Fwww.acme.org%
2Fpractitioners%7C25456"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=78d4b720-4193-5b2e-a4d5-
22b81fe3b2d7&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Practitioner/434394394",
    "resource": {
      "resourceType": "Practitioner",
      "id": "434394394",
      "meta": {

```

```
      "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Practitioner"],
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
    },
    "identifier": [{
      "system": "http://hl7.org.fhir/sid/us-npi",
      "value": "9941339108"
    }, {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [{
    "family": "Bone",
    "given": ["Ronald"],
    "prefix": ["Dr"]
  }
  ],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
  ]
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/4546487987",
  "resource": {
    "resourceType": "Practitioner",
    "id": "4546487987",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
    },
    "identifier": [{
      "system": "http://hl7.org.fhir/sid/us-npi",
      "value": "9941339108"
    }, {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [{
    "family": "John",
    "given": ["Ronald"],
    "prefix": ["Dr"]
  }
  ],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
  ]
}
]
```



---

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# PractitionerRole

## Use Case

A member downloads a mobile application which can help search for information about a Practitioner's affiliation to other Facilities. The application accepts a member's input of Practitioner ID, and calls the Practitioner search resource. If Practitioner ID is not known, the mobile application implements the Practitioner Search to help locate the practitioner ID to search for Facility Affiliations. That call retrieves the bundle of Provider data and returns it in the industry-standard format. The list of Practitioners and their affiliations matching the input search criteria is then formatted for display in the mobile application.

The member now views a list of practitioners and their affiliations in a user friendly way.

## Supported Query Parameters

**Availability:** 5.90.001.000

These query parameters can be sent in any combination.

### Query Parameters

Query Parameter	Type	Description
<a href="#">available-days</a>	token <sup>1</sup>	Days available
<a href="#">available-end-time</a>	token	Available end time
<a href="#">available-start-time</a>	token	Available start time
<a href="#">telecom-available-days</a>	token	Days available
<a href="#">telecom-available-end-time</a>	token	End time
<a href="#">telecom-available-start-time</a>	token	Start time
<a href="#">endpoint</a>	reference	Select PractitionerRoles with the specified endpoint
<a href="#">identifier-assigner</a>	reference	Select PractitionerRoles with an identifier issued by the specified organization
<a href="#">identifier</a>	token	Select PractitionerRoles with the specified identifier
<a href="#">location</a>	reference	Select PractitionerRoles available at the specified location
<a href="#">network</a>	reference	Select roles where the practitioner is a member of the specified health insurance provider network



<a href="#">new-patient-network</a>	reference	Select PractitionerRoles that are part of the specified network and are/are not accepting new patients
<a href="#">new-patient</a>	token	Select PractitionerRoles that are/are not accepting new patients
<a href="#">organization</a>	reference	Select PractitionerRoles available at the specified organization
<a href="#">practitioner</a>	reference	Select roles filled by the specified practitioner
<a href="#">qualification-code</a>	token	Select PractitionerRoles with a type of qualification matching the specified code
<a href="#">qualification-issuer</a>	reference	Select PractitionerRoles with a qualification issued by the specified organization
<a href="#">qualification-status</a>	token	Select PractitionerRoles with a qualification status matching the specified code
<a href="#">qualification-wherevalid-code</a>	token	Select PractitionerRoles with a qualification that is valid at the location indicated by the specified code
<a href="#">qualification-wherevalid-location</a>	reference	Select PractitionerRoles with a qualification that is valid at the specified location
<a href="#">role</a>	token	Select PractitionerRoles with the specified role
<a href="#">service</a>	reference	Select PractitionerRoles providing the specified service
<a href="#">specialty</a>	token	Select PractitionerRoles associated with the specified specialty
<a href="#">via-intermediary</a>	reference	Select PractitionerRoles with contact information available through the specified intermediary

1. A token refers to either [system][value] or [ value]. Refer to <https://www.hl7.org/fhir/search.html#token> where the code is the Identifier.value.

## Sample GET Requests

- [base]/PractitionerRole?specialty=[system][value]
- [base]/PractitionerRole?specialty=[system][value]&\_include=PractitionerRole:practitioner&\_include=PractitionerRole:endpoint
- [base]/PractitionerRole?practitioner.identifier=[system][value]
- [base]/PractitionerRole?practitioner.identifier=[system][value]&\_include=PractitionerRole:practitioner&\_include=PractitionerRole:endpoint
- [base]/PractitionerRole?practitioner.name=XXXX
- [base]/PractitionerRole?practitioner.name=XXXX?\_include=PractitionerRole:practitioner&\_include=PractitionerRole:endpoint

## Changing the Data Profile of the GET Response

You can change the data profile in the GET response using the query parameter, **\_profile**. You can also use the header parameter, **X-Profile**. However, if you include both the **\_profile** query parameter and the **X-Profile** header parameter in a request, the **\_profile** query parameter takes precedence:

The value of **\_profile** and **X-Profile** are the following.

- **US Core:** <http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole>
- **CARIN BB:** <http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-practitionerrole>
- **Da Vinci PDEX Plan Net:** <http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-PractitionerRole>

The following example shows the use of the **\_profile** query parameter in one of the search requests:

```
GET /PractitionerRole?specialty=http://snomed.info/sct|9632001&_profile=http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-practitionerrole
```

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN BB](#)
- [US Core](#)
- [Da Vinci PDEX Plan Net](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.

500

Internal server error.

## Sample Requests and Responses

[base]/PractitionerRole?specialty=[system][value]

### CARIN BB

```
[base] / PractitionerRole ? specialty = [system] | [value]

GET /PractitionerRole?specialty=http://snomed.info/sct|9632001&_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-practitionerrole

{
  "resourceType": "Bundle",
  "id": "3cb298c2-18ea-4fdf-9251-cab78b9ba2e7",
  "meta": {
    "lastUpdated": "2021-01-25T17:34:28.938+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%2FStructureDefinition%2Fcarin-bb-practitionerrole&specialty=http%3A%2F%2Fsnomed.info%2Fsct%2F9632001"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=f1143e39-1910-52dd-908d-64e7a4913a4c&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/4546487987",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "4546487987",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\tDr Adam Careful is a Referring Practitioner for Acme Hospital from 1-Jan 2012 to 31-Mar\n\t\t\t\t\t2012\n\t\t\t\t</p>\n\t\t\t</div>"
      },
      "identifier": [{
        "system": "http://www.acme.org/practitioners",
        "value": "23"
      }
    ],
    "active": true,
    "period": {
      "start": "2012-01-01",
      "end": "2012-03-31"
    },
    "practitioner": {
      "reference": "Practitioner/4546487987",
      "display": "Dr Adam Careful"
    },
    "organization": {
      "reference": "Organization/f001"
    },
    "code": [{
```

```

        "coding": [{
          "system": "http://hl7.org/fhir/v2/0286",
          "code": "RP"
        }
      ],
    ],
    "specialty": [{
      "coding": [{
        "system": "http://snomed.info/sct",
        "code": "9632001",
        "display": "General medical practice"
      }
    ]
  },
  ],
  "location": [{
    "reference": "Location/1",
    "display": "South Wing, second floor"
  }
],
"healthcareService": [{
  "reference": "HealthcareService/example"
}],
"telecom": [{
  "system": "phone",
  "value": "(03) 5555 6473",
  "use": "work"
}, {
  "system": "email",
  "value": "adam.southern@example.org",
  "use": "work"
}],
"availableTime": [{
  "daysOfWeek": ["mon", "tue", "wed"],
  "availableStartTime": "09:00:00",
  "availableEndTime": "16:30:00"
}, {
  "daysOfWeek": ["thu", "fri"],
  "availableStartTime": "09:00:00",
  "availableEndTime": "12:00:00"
}],
"notAvailable": [{
  "description": "Adam will be on extended leave during May 2017",
  "during": {
    "start": "2017-05-01",
    "end": "2017-05-20"
  }
}],
"availabilityExceptions": "Adam is generally unavailable on public holidays and during the
Christmas/New Year break",
"endpoint": [{
  "reference": "Endpoint/555666"
}, {
  "reference": "Endpoint/777888"
}],
}, {
  "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
  "resource": {
    "resourceType": "PractitionerRole",
    "id": "45345345",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-
practitionerrole"]
    }
  }
},

```

```

    "text": {
      "status": "generated",
      "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\\">\n          <span style=\\"color: gray;\\">practitioner:</span> Carla Espinosa<br/><span style=\\"color: gray;\\">organization:</span> AUMC<br/><span style=\\"color: gray;\\">role:</span> Renal nurse\n          </div>"
    },
    "practitioner": {
      "reference": "Practitioner/45345345",
      "display": "Carla Espinosa"
    },
    "organization": {
      "reference": "Organization/f201",
      "display": "AUMC"
    },
    "code": [{
      "coding": [{
        "system": "http://snomed.info/sct",
        "code": "224565004",
        "display": "Renal nurse"
      }
      ],
    },
    ],
    "specialty": [{
      "coding": [{
        "system": "http://snomed.info/sct",
        "code": "9632001",
        "display": "Nursing procedure"
      }
      ],
    },
    ],
    "endpoint": [{
      "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
    }
    ],
  }
}

```

## DaVinci PDEX Plan Net

```

[base] / PractitionerRole ? specialty = [system] | [value]

GET /PractitionerRole?specialty=http://snomed.info/sct|9632001&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-PractitionerRole

{
  "resourceType": "Bundle",
  "id": "ac61e18c-4718-41b1-a3a9-f1924f856919",
  "meta": {
    "lastUpdated": "2021-01-25T17:41:46.081+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-PractitionerRole&specialty=http%3A%2F%2Fsnomed.info%2Fsct%7C9632001"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=87885570-e769-5525-9a0d-12a206fae996&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
  ],
  "entry": [{

```

```

"fullUrl": "https://<datahub_server>/PractitionerRole/4546487987",
"resource": {
  "resourceType": "PractitionerRole",
  "id": "4546487987",
  "meta": {
    "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-PractitionerRole"]
  },
  "text": {
    "status": "generated",
    "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t<p>\n\t\t\t\tDr Adam Careful is a Referring Practitioner for Acme Hospital from 1-Jan 2012 to 31-Mar\n\t\t\t\t\t\t2012\n\t\t\t\t</p>\n\t\t</div>"
  },
  "identifier": [{
    "system": "http://www.acme.org/practitioners",
    "value": "23"
  }],
  "active": true,
  "period": {
    "start": "2012-01-01",
    "end": "2012-03-31"
  },
  "practitioner": {
    "reference": "Practitioner/4546487987",
    "display": "Dr Adam Careful"
  },
  "organization": {
    "reference": "Organization/f001"
  },
  "code": [{
    "coding": [{
      "system": "http://hl7.org/fhir/v2/0286",
      "code": "RP"
    }]
  }],
  "specialty": [{
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "9632001",
      "display": "General medical practice"
    }]
  }],
  "location": [{
    "reference": "Location/1",
    "display": "South Wing, second floor"
  }],
  "healthcareService": [{
    "reference": "HealthcareService/example"
  }],
  "telecom": [{
    "system": "phone",
    "value": "(03) 5555 6473",
    "use": "work"
  }, {
    "system": "email",
    "value": "adam.southern@example.org",
    "use": "work"
  }],
  "availableTime": [{
    "daysOfWeek": ["mon", "tue", "wed"],
    "availableStartTime": "09:00:00",
    "availableEndTime": "16:30:00"
  }]
}

```

```

    }, {
      "daysOfWeek": ["thu", "fri"],
      "availableStartTime": "09:00:00",
      "availableEndTime": "12:00:00"
    }
  ],
  "notAvailable": [{
    "description": "Adam will be on extended leave during May 2017",
    "during": {
      "start": "2017-05-01",
      "end": "2017-05-20"
    }
  }
],
  "availabilityExceptions": "Adam is generally unavailable on public holidays and during the
Christmas/New Year break",
  "endpoint": [{
    "reference": "Endpoint/555666"
  }, {
    "reference": "Endpoint/777888"
  }
]
}, {
  "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
  "resource": {
    "resourceType": "PractitionerRole",
    "id": "45345345",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
PractitionerRole"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n                <span style='color:
gray;'>practitioner:</span> Carla Espinosa<br/><span style='color: gray;'>organization:</span> AUMC<br
/><span style='color: gray;'>role:</span> Renal nurse\n            </div>"
    },
    "practitioner": {
      "reference": "Practitioner/45345345",
      "display": "Carla Espinosa"
    },
    "organization": {
      "reference": "Organization/f201",
      "display": "AUMC"
    },
    "code": [{
      "coding": [{
        "system": "http://snomed.info/sct",
        "code": "224565004",
        "display": "Renal nurse"
      }
    ]
  }
],
  "specialty": [{
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "9632001",
      "display": "Nursing procedure"
    }
  ]
},
  "endpoint": [{
    "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
  }
]
}
]
}

```

}

## US Core

```
[base] / PractitionerRole ? specialty = [system] | [value]

GET /PractitionerRole?specialty=http://snomed.info/sct|9632001

{
  "resourceType": "Bundle",
  "id": "7a933fd6-b2aa-49ba-9463-7fe099115dca",
  "meta": {
    "lastUpdated": "2021-01-25T17:17:48.704+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?specialty=http%3A%2F%2Fsnomed.info%2Fsct%
7C9632001"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=313bb5c3-beed-5e9d-90f9-
590ad8e95a8d&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/4546487987",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "4546487987",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\tDr Adam
Careful is a Referring Practitioner for Acme Hospital from 1-Jan 2012 to 31-Mar\n\t\t\t\t2012\n\t\t\t</p>\n\t\t</div>"
      },
      "identifier": [{
        "system": "http://www.acme.org/practitioners",
        "value": "23"
      }
    ],
    "active": true,
    "period": {
      "start": "2012-01-01",
      "end": "2012-03-31"
    },
    "practitioner": {
      "reference": "Practitioner/4546487987",
      "display": "Dr Adam Careful"
    },
    "organization": {
      "reference": "Organization/f001"
    },
    "code": [{
      "coding": [{
        "system": "http://hl7.org/fhir/v2/0286",
        "code": "RP"
      }
    ]
  }
],
  "specialty": [{
    "coding": [{
      "system": "http://snomed.info/sct",

```



```

        "code": "9632001",
        "display": "General medical practice"
      }
    ],
    "location": [{
      "reference": "Location/1",
      "display": "South Wing, second floor"
    }
  ],
  "healthcareService": [{
    "reference": "HealthcareService/example"
  }
],
"telecom": [{
  "system": "phone",
  "value": "(03) 5555 6473",
  "use": "work"
}, {
  "system": "email",
  "value": "adam.southern@example.org",
  "use": "work"
}
],
"availableTime": [{
  "daysOfWeek": ["mon", "tue", "wed"],
  "availableStartTime": "09:00:00",
  "availableEndTime": "16:30:00"
}, {
  "daysOfWeek": ["thu", "fri"],
  "availableStartTime": "09:00:00",
  "availableEndTime": "12:00:00"
}
],
"notAvailable": [{
  "description": "Adam will be on extended leave during May 2017",
  "during": {
    "start": "2017-05-01",
    "end": "2017-05-20"
  }
}
],
"availabilityExceptions": "Adam is generally unavailable on public holidays and during the
Christmas/New Year break",
"endpoint": [{
  "reference": "Endpoint/555666"
}, {
  "reference": "Endpoint/777888"
}
]
}, {
  "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
  "resource": {
    "resourceType": "PractitionerRole",
    "id": "45345345",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color:
gray;'>practitioner:</span> Carla Espinosa<br/><span style='color: gray;'>organization:</span> AUMC<br
/><span style='color: gray;'>role:</span> Renal nurse\n          </div>"
    },
    "practitioner": {
      "reference": "Practitioner/45345345",
      "display": "Carla Espinosa"
    },
    "organization": {

```

```
        "reference": "Organization/f201",
        "display": "AUMC"
    },
    "code": [{
        "coding": [{
            "system": "http://snomed.info/sct",
            "code": "224565004",
            "display": "Renal nurse"
        }
    ]
    },
    "specialty": [{
        "coding": [{
            "system": "http://snomed.info/sct",
            "code": "9632001",
            "display": "Nursing procedure"
        }
    ]
    },
    "endpoint": [{
        "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
    }
    ]
    }
    ]
    }
    ]
    }
    ]
    }
```

**[base]/PractitionerRole?specialty=[system]|[value]&\_include=PractitionerRole:practitioner&\_include=PractitionerRole:endpoint**

## CARIN BB

```
[base] / PractitionerRole ? specialty = [system] | [value] & _include = PractitionerRole : practitioner &
_include = PractitionerRole : endpoint

GET /PractitionerRole?specialty=9632001&_include=PractitionerRole:practitioner&_include=PractitionerRole:
endpoint&_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-practitionerrole

{
  "resourceType": "Bundle",
  "id": "8a2d4871-e11c-4c88-8e1b-cd3c4da21e3e",
  "meta": {
    "lastUpdated": "2021-01-25T17:35:59.193+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_include=PractitionerRole%
3Apractitioner&_include=PractitionerRole%3Aendpoint&_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%
2FStructureDefinition%2Fcarin-bb-practitionerrole&specialty=9632001"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=262c52af-dc1b-5fc3-9b7f-
5b68f41a472d&_getpagesoffset=2&_count=2&_pretty=true&_include=PractitionerRole%
3Aendpoint&_include=PractitionerRole%3Apractitioner&_bundletype=searchset"
  }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/4546487987",
    "resource": {
```

```

    "resourceType": "PractitionerRole",
    "id": "4546487987",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/car/StructureDefinition/car-in-bb-
practitionerrole"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\tDr Adam
Careful is a Referring Practitioner for Acme Hospital from 1-Jan 2012 to 31-Mar\n\t\t\t\t2012\n\t\t\t</p>\n\t\t</div>"
    },
    "identifier": [{
      "system": "http://www.acme.org/practitioners",
      "value": "23"
    }
  ],
  "active": true,
  "period": {
    "start": "2012-01-01",
    "end": "2012-03-31"
  },
  "practitioner": {
    "reference": "Practitioner/4546487987",
    "display": "Dr Adam Careful"
  },
  "organization": {
    "reference": "Organization/f001"
  },
  "code": [{
    "coding": [{
      "system": "http://hl7.org/fhir/v2/0286",
      "code": "RP"
    }
  ]
},
  "specialty": [{
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "9632001",
      "display": "General medical practice"
    }
  ]
},
  "location": [{
    "reference": "Location/1",
    "display": "South Wing, second floor"
  }
],
  "healthcareService": [{
    "reference": "HealthcareService/example"
  }
],
  "telecom": [{
    "system": "phone",
    "value": "(03) 5555 6473",
    "use": "work"
  }, {
    "system": "email",
    "value": "adam.southern@example.org",
    "use": "work"
  }
],
  "availableTime": [{
    "daysOfWeek": ["mon", "tue", "wed"],
    "availableStartTime": "09:00:00",
    "availableEndTime": "16:30:00"
  }, {
    "daysOfWeek": ["thu", "fri"],

```

```

        "availableStartTime": "09:00:00",
        "availableEndTime": "12:00:00"
    },
    ],
    "notAvailable": [{
        "description": "Adam will be on extended leave during May 2017",
        "during": {
            "start": "2017-05-01",
            "end": "2017-05-20"
        }
    }
    ],
    "availabilityExceptions": "Adam is generally unavailable on public holidays and during the
Christmas/New Year break",
    "endpoint": [{
        "reference": "Endpoint/555666"
    }, {
        "reference": "Endpoint/777888"
    }
    ],
    },
    "search": {
        "mode": "match"
    }
}, {
    "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
    "resource": {
        "resourceType": "PractitionerRole",
        "id": "45345345",
        "meta": {
            "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-
practitionerrole"]
        },
        "text": {
            "status": "generated",
            "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n                <span style='color:
gray;'>practitioner:</span> Carla Espinosa<br/><span style='color: gray;'>organization:</span> AUMC<br
/><span style='color: gray;'>role:</span> Renal nurse\n                </div>"
        },
        "practitioner": {
            "reference": "Practitioner/45345345",
            "display": "Carla Espinosa"
        },
        "organization": {
            "reference": "Organization/f201",
            "display": "AUMC"
        },
        "code": [{
            "coding": [{
                "system": "http://snomed.info/sct",
                "code": "224565004",
                "display": "Renal nurse"
            }
            ]
        }
    ],
    ],
    "specialty": [{
        "coding": [{
            "system": "http://snomed.info/sct",
            "code": "9632001",
            "display": "Nursing procedure"
        }
        ]
    }
    ],
    "endpoint": [{
        "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
    }
    ],
    },
    "search": {

```

```

    "mode": "match"
  }, {
    "fullUrl": "https://<datahub_server>/Practitioner/4546487987",
    "resource": {
      "resourceType": "Practitioner",
      "id": "4546487987",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
      },
      "identifier": [{
        "system": "http://hl7.org.fhir/sid/us-npi",
        "value": "9941339108"
      }, {
        "system": "http://www.acme.org/practitioners",
        "value": "25456"
      }
    ],
    "name": [{
      "family": "John",
      "given": ["Ronald"],
      "prefix": ["Dr"]
    }
  ],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
],
  "search": {
    "mode": "include"
  }
}, {
  "fullUrl": "https://<datahub_server>/Endpoint/555666",
  "resource": {
    "resourceType": "Endpoint",
    "id": "555666",
    "meta": {
      "lastUpdated": "2020-07-07T13:26:22.0314215+00:00",
      "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
    },
    "language": "en-US",
    "text": {
      "status": "extensions",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b><
/p><h3>Ids</h3><table class='grid'><tr><td>-</td></tr><tr><td>*</td></tr></table><h3>Meta</h3><table
class='grid'><tr><td>-</td></tr><tr><td>*</td></tr></table><p><b>language</b>: en-US<
/p><blockquote><p><b>Endpoint Usecase</b></p><h3>Urls</h3><table class='grid'><tr><td>-</td><
/tr><tr><td>*</td></tr></table><p><b>value</b>: <span title='Codes: {http://terminology.hl7.org/CodeSystem
/v3-ActReason HOPERAT}'>healthcare operations</span></p></blockquote><p><b>status</b>: active<
/p><p><b>connectionType</b>: <span title='http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/EndpointConnectionTypeCS rest-non-fhir'>REST (not FHIR)</span></p><p><b>name</b>: Endpoint for Acme of
CT Portal</p><p><b>payloadType</b>: <span title='Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net
/CodeSystem/EndpointPayloadTypeCS NA}'>Not Applicable</span></p><p><b>address</b>: <a href='
https://urlportal.acmect.com'>https://urlportal.acmect.com</a></p></div>"
    },
    "extension": [{
      "url": "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/endpoint-
usecase",
      "extension": [{

```

```

        "url": "type",
        "valueCodeableConcept": {
          "coding": [{
            "system": "http://terminology.hl7.org/CodeSystem/v3-ActReason",
            "code": "HOPERAT"
          }
        ]
      },
    ],
    "identifier": [{
      "system": "http://www.acme.com/identifiers/patient",
      "value": "123456"
    }, {
      "system": "Tz-MDM",
      "value": "AAAA-0124-8"
    }
  ],
  "status": "active",
  "connectionType": {
    "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/EndpointConnectionTypeCS",
    "code": "rest-non-fhir"
  },
  "name": "Endpoint for Acme of CT Portal",
  "payloadType": [{
    "coding": [{
      "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/EndpointPayloadTypeCS",
      "code": "NA"
    }
  ]
},
  "address": "https://urlportal.acmect.com"
},
"search": {
  "mode": "include"
}
}, {
  "fullUrl": "https://<datahub_server>/Endpoint/777888",
  "resource": {
    "resourceType": "Endpoint",
    "id": "777888",
    "meta": {
      "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\tHealth Intersections
CarePlan Hub<br/>\n\t\t\tCarePlans can be uploaded to/from this location\n\t\t</div>"
    },
    "identifier": [{
      "system": "http://example.org/enpoint-identifier",
      "value": "epcp12"
    }
  ],
  "status": "active",
  "connectionType": {
    "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
    "code": "hl7-fhir-rest"
  },
  "name": "Health Intersections CarePlan Hub",
  "managingOrganization": {
    "reference": "Organization/example"
  },
  "contact": [{
    "system": "email",
    "value": "endpointm2@example.org",

```

```

        "use": "work"
      }
    ],
    "period": {
      "start": "2014-09-01"
    },
    "payloadType": [{
      "coding": [{
        "system": "http://hl7.org/fhir/resource-types",
        "code": "CarePlan"
      }]
    }
  ],
  "payloadMimeType": ["application/fhir+xml"],
  "address": "http://fhir3.healthintersections.com.au/open/CarePlan",
  "header": ["bearer-code BASGS534s4"]
},
"search": {
  "mode": "include"
}
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/45345345",
  "resource": {
    "resourceType": "Practitioner",
    "id": "45345345",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 5454545646, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
    },
    "identifier": [{
      "system": "http://hl7.org.fhir/sid/us-npi",
      "value": "5454545646"
    }], {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [{
    "family": "James",
    "given": ["Gordon"],
    "prefix": ["Dr"]
  }
  ],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
  ],
  "search": {
    "mode": "include"
  }
}, {
  "fullUrl": "Endpoint/urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
  "resource": {
    "resourceType": "Endpoint",
    "id": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
    "meta": {
      "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
    },
    "text": {

```

```

        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\tHealth Intersections
CarePlan Hub<br/>\n\t\t\tCarePlans can be uploaded to/from this location\n\t\t</div>"
    },
    "identifier": [{
        "system": "http://example.org/endpoint-identifier",
        "value": "epcpl2"
    }
    ],
    "status": "active",
    "connectionType": {
        "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
        "code": "hl7-fhir-rest"
    },
    "name": "Health Intersections CarePlan Hub",
    "managingOrganization": {
        "reference": "Organization/example2"
    },
    "contact": [{
        "system": "email",
        "value": "endpointm2@example.org",
        "use": "work"
    }
    ],
    "period": {
        "start": "2014-09-01"
    },
    "payloadType": [{
        "coding": [{
            "system": "http://hl7.org/fhir/resource-types",
            "code": "CarePlan"
        }
        ]
    }
    ],
    "payloadMimeType": ["application/fhir+xml"],
    "address": "http://fhir3.healthintersections.com.au/open/CarePlan",
    "header": ["bearer-code BASGS534s4"]
    },
    "search": {
        "mode": "include"
    }
    }
}

```

## US Core

```

[base] / PractitionerRole ? specialty = [system] | [value] & _include = PractitionerRole : practitioner &
_include = PractitionerRole : endpoint

GET /PractitionerRole?specialty=http://snomed.info/sct|9632001&_include=PractitionerRole:
practitioner&_include=PractitionerRole:endpoint

{
  "resourceType": "Bundle",
  "id": "89f411d0-81b9-45e8-8f1d-a5f85835660d",
  "meta": {
    "lastUpdated": "2021-01-25T17:14:05.592+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_include=PractitionerRole%
3Apractitioner&_include=PractitionerRole%3Aendpoint&specialty=9632001"
  }], {
    "relation": "next",

```



```

    "url": "https://<datahub_server>?_getpages=3ac5ba18-bc57-53ba-b314-7f8440ffd3f6&_getpagesoffset=2&_count=2&_pretty=true&_include=PractitionerRole%3Aendpoint&_include=PractitionerRole%3Apractitioner&_bundletype=searchset"
  }
],
"entry": [{
  "fullUrl": "https://<datahub_server>/PractitionerRole/4546487987",
  "resource": {
    "resourceType": "PractitionerRole",
    "id": "4546487987",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\tDr Adam Careful is a Referring Practitioner for Acme Hospital from 1-Jan 2012 to 31-Mar\n\t\t\t\t\t2012\n\t\t\t\t<p>\n\t\t\t</div>"
    },
    "identifier": [{
      "system": "http://www.acme.org/practitioners",
      "value": "23"
    }
  ],
  "active": true,
  "period": {
    "start": "2012-01-01",
    "end": "2012-03-31"
  },
  "practitioner": {
    "reference": "Practitioner/4546487987",
    "display": "Dr Adam Careful"
  },
  "organization": {
    "reference": "Organization/f001"
  },
  "code": [{
    "coding": [{
      "system": "http://hl7.org/fhir/v2/0286",
      "code": "RP"
    }
  ]
  },
  "specialty": [{
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "9632001",
      "display": "General medical practice"
    }
  ]
  },
  "location": [{
    "reference": "Location/1",
    "display": "South Wing, second floor"
  }
  ],
  "healthcareService": [{
    "reference": "HealthcareService/example"
  }
  ],
  "telecom": [{
    "system": "phone",
    "value": "(03) 5555 6473",
    "use": "work"
  }, {
    "system": "email",
    "value": "adam.southern@example.org",
    "use": "work"
  }
  ]
}
]

```

```

    ],
    "availableTime": [{
      "daysOfWeek": ["mon", "tue", "wed"],
      "availableStartTime": "09:00:00",
      "availableEndTime": "16:30:00"
    }, {
      "daysOfWeek": ["thu", "fri"],
      "availableStartTime": "09:00:00",
      "availableEndTime": "12:00:00"
    }
  ],
  "notAvailable": [{
    "description": "Adam will be on extended leave during May 2017",
    "during": {
      "start": "2017-05-01",
      "end": "2017-05-20"
    }
  }
],
  "availabilityExceptions": "Adam is generally unavailable on public holidays and during the
Christmas/New Year break",
  "endpoint": [{
    "reference": "Endpoint/555666"
  }, {
    "reference": "Endpoint/777888"
  }
],
  "search": {
    "mode": "match"
  }
}, {
  "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
  "resource": {
    "resourceType": "PractitionerRole",
    "id": "45345345",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color:
gray;'>practitioner:</span> Carla Espinosa<br/><span style='color: gray;'>organization:</span> AUMC<br
/><span style='color: gray;'>role:</span> Renal nurse\n          </div>"
    },
    "practitioner": {
      "reference": "Practitioner/45345345",
      "display": "Carla Espinosa"
    },
    "organization": {
      "reference": "Organization/f201",
      "display": "AUMC"
    },
    "code": [{
      "coding": [{
        "system": "http://snomed.info/sct",
        "code": "224565004",
        "display": "Renal nurse"
      }
    ]
  }
],
  "specialty": [{
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "9632001",
      "display": "Nursing procedure"
    }
  ]
}
],

```

```

    "endpoint": [{
      "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
    }
  ],
  "search": {
    "mode": "match"
  }
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/4546487987",
  "resource": {
    "resourceType": "Practitioner",
    "id": "4546487987",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
    },
    "identifier": [{
      "system": "http://hl7.org.fhir/sid/us-npi",
      "value": "9941339108"
    }, {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [{
    "family": "John",
    "given": ["Ronald"],
    "prefix": ["Dr"]
  }
  ],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
  ]
},
"search": {
  "mode": "include"
}
}, {
  "fullUrl": "https://<datahub_server>/Endpoint/555666",
  "resource": {
    "resourceType": "Endpoint",
    "id": "555666",
    "meta": {
      "lastUpdated": "2020-07-07T13:26:22.0314215+00:00",
      "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
    },
    "language": "en-US",
    "text": {
      "status": "extensions",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative</b><
/p><h3>Ids</h3><table class='grid'><tr><td>-</td></tr><tr><td>*</td></tr></table><h3>Meta</h3><table
class='grid'><tr><td>-</td></tr><tr><td>*</td></tr></table><p><b>language</b>: en-US<
/p><blockquote><p><b>Endpoint Usecase</b></p><h3>Urls</h3><table class='grid'><tr><td>-</td><
/tr><tr><td>*</td></tr></table><p><b>value</b>: <span title='Codes: {http://terminology.hl7.org/CodeSystem
/v3-ActReason HOPERAT}'>healthcare operations</span></p></blockquote><p><b>status</b>: active<
/p><p><b>connectionType</b>: <span title='http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/EndpointConnectionTypeCS rest-non-fhir'>REST (not FHIR)</span></p><p><b>name</b>: Endpoint for Acme of
CT Portal</p><p><b>payloadType</b>: <span title='Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net
/CodeSystem/EndpointPayloadTypeCS NA}'>Not Applicable</span></p><p><b>address</b>: <a href='\"

```

```

https://urlofportal.acmect.com\">https://urlofportal.acmect.com</a></p></div>"
  },
  "extension": [{
    "url": "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/endpoint-
usecase",
    "extension": [{
      "url": "type",
      "valueCodeableConcept": {
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/v3-ActReason",
          "code": "HOPERAT"
        }
        ]
      }
    ]
  }
  ],
  "identifier": [{
    "system": "http://www.acme.com/identifiers/patient",
    "value": "123456"
  }, {
    "system": "Tz-MDM",
    "value": "AAAA-0124-8"
  }
  ],
  "status": "active",
  "connectionType": {
    "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/EndpointConnectionTypeCS",
    "code": "rest-non-fhir"
  },
  "name": "Endpoint for Acme of CT Portal",
  "payloadType": [{
    "coding": [{
      "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/EndpointPayloadTypeCS",
      "code": "NA"
    }
    ]
  }
  ],
  "address": "https://urlofportal.acmect.com"
},
"search": {
  "mode": "include"
}
}, {
  "fullUrl": "https://<datahub_server>/Endpoint/777888",
  "resource": {
    "resourceType": "Endpoint",
    "id": "777888",
    "meta": {
      "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\tHealth Intersections
CarePlan Hub<br/>\n\t\t\tCarePlans can be uploaded to/from this loccation\n\t\t</div>"
    },
    "identifier": [{
      "system": "http://example.org/enpoint-identifier",
      "value": "epcp12"
    }
  ],
  "status": "active",
  "connectionType": {
    "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
    "code": "hl7-fhir-rest"
  },
  "name": "Health Intersections CarePlan Hub",

```

```

    "managingOrganization": {
      "reference": "Organization/example"
    },
    "contact": [{
      "system": "email",
      "value": "endpointm2@example.org",
      "use": "work"
    }
  ],
  "period": {
    "start": "2014-09-01"
  },
  "payloadType": [{
    "coding": [{
      "system": "http://hl7.org/fhir/resource-types",
      "code": "CarePlan"
    }
  ]
}],
  "payloadMimeType": ["application/fhir+xml"],
  "address": "http://fhir3.healthintersections.com.au/open/CarePlan",
  "header": ["bearer-code BASGS534s4"]
},
"search": {
  "mode": "include"
}
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/45345345",
  "resource": {
    "resourceType": "Practitioner",
    "id": "45345345",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 5454545646, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
    },
    "identifier": [{
      "system": "http://hl7.org.fhir/sid/us-npi",
      "value": "5454545646"
    }], {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [{
    "family": "James",
    "given": ["Gordon"],
    "prefix": ["Dr"]
  }
],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
]
},
"search": {
  "mode": "include"
}
}, {
  "fullUrl": "Endpoint/urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
  "resource": {

```

```

    "resourceType": "Endpoint",
    "id": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
    "meta": {
      "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\tHealth Intersections  
CarePlan Hub<br/>\n\t\t\tCarePlans can be uploaded to/from this loccation\n\t\t</div>"
    },
    "identifier": [{
      "system": "http://example.org/enpoint-identifier",
      "value": "epcpt2"
    }
  ],
  "status": "active",
  "connectionType": {
    "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
    "code": "hl7-fhir-rest"
  },
  "name": "Health Intersections CarePlan Hub",
  "managingOrganization": {
    "reference": "Organization/example2"
  },
  "contact": [{
    "system": "email",
    "value": "endpointm2@example.org",
    "use": "work"
  }
],
"period": {
  "start": "2014-09-01"
},
"payloadType": [{
  "coding": [{
    "system": "http://hl7.org/fhir/resource-types",
    "code": "CarePlan"
  }
]
},
"payloadMimeType": ["application/fhir+xml"],
"address": "http://fhir3.healthintersections.com.au/open/CarePlan",
"header": ["bearer-code BASGS534s4"]
},
"search": {
  "mode": "include"
}
}
]
}

```

## DaVinci PDEX Plan Net

```
[base] / PractitionerRole ? specialty = [system] | [value] & _include = PractitionerRole : practitioner &
_include = PractitionerRole : endpoint
```

```
GET /PractitionerRole?specialty=9632001&_include=PractitionerRole:practitioner&_include=PractitionerRole:
endpoint&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-PractitionerRole
```

```

{
  "resourceType": "Bundle",
  "id": "fbda4ae8-d828-43fe-809d-93666a9ad96f",
  "meta": {
    "lastUpdated": "2021-01-25T17:42:01.798+00:00"
  },
  "type": "searchset",
  "total": 3,

```

```

    "link": [{
      "relation": "self",
      "url": "https://<datahub_server>/PractitionerRole?_include=PractitionerRole%
3Apractitioner&_include=PractitionerRole%3Aendpoint&_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-
pdex-plan-net%2FStructureDefinition%2Fplannet-PractitionerRole&specialty=9632001"
    }, {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=b941e474-8758-5adf-9010-
2b54007271eb&_getpagesoffset=2&_count=2&_pretty=true&_include=PractitionerRole%
3Aendpoint&_include=PractitionerRole%3Apractitioner&_bundletype=searchset"
    }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/4546487987",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "4546487987",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
PractitionerRole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\t\tDr Adam
Careful is a Referring Practitioner for Acme Hospital from 1-Jan 2012 to 31-Mar\n\t\t\t\t\t2012\n\t\t\t\t\t</p>\n\t\t\t</div>"
      },
      "identifier": [{
        "system": "http://www.acme.org/practitioners",
        "value": "23"
      }
    ],
    "active": true,
    "period": {
      "start": "2012-01-01",
      "end": "2012-03-31"
    },
    "practitioner": {
      "reference": "Practitioner/4546487987",
      "display": "Dr Adam Careful"
    },
    "organization": {
      "reference": "Organization/f001"
    },
    "code": [{
      "coding": [{
        "system": "http://hl7.org/fhir/v2/0286",
        "code": "RP"
      }
    ]
  }
  ],
  "specialty": [{
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "9632001",
      "display": "General medical practice"
    }
  ]
  },
  "location": [{
    "reference": "Location/1",
    "display": "South Wing, second floor"
  }
  ],
  "healthcareService": [{
    "reference": "HealthcareService/example"
  }
  ],
  "telecom": [{

```

```

        "system": "phone",
        "value": "(03) 5555 6473",
        "use": "work"
    }, {
        "system": "email",
        "value": "adam.southern@example.org",
        "use": "work"
    }
],
"availableTime": [{
    "daysOfWeek": ["mon", "tue", "wed"],
    "availableStartTime": "09:00:00",
    "availableEndTime": "16:30:00"
}, {
    "daysOfWeek": ["thu", "fri"],
    "availableStartTime": "09:00:00",
    "availableEndTime": "12:00:00"
}
],
"notAvailable": [{
    "description": "Adam will be on extended leave during May 2017",
    "during": {
        "start": "2017-05-01",
        "end": "2017-05-20"
    }
}
],
"availabilityExceptions": "Adam is generally unavailable on public holidays and during the
Christmas/New Year break",
"endpoint": [{
    "reference": "Endpoint/555666"
}, {
    "reference": "Endpoint/777888"
}
],
},
"search": {
    "mode": "match"
}
}, {
    "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
    "resource": {
        "resourceType": "PractitionerRole",
        "id": "45345345",
        "meta": {
            "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
PractitionerRole"]
        },
        "text": {
            "status": "generated",
            "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n                <span style='color:
gray;'>practitioner:</span> Carla Espinosa<br/><span style='color: gray;'>organization:</span> AUMC<br
/><span style='color: gray;'>role:</span> Renal nurse\n            </div>"
        },
        "practitioner": {
            "reference": "Practitioner/45345345",
            "display": "Carla Espinosa"
        },
        "organization": {
            "reference": "Organization/f201",
            "display": "AUMC"
        },
        "code": [{
            "coding": [{
                "system": "http://snomed.info/sct",
                "code": "224565004",
                "display": "Renal nurse"
            }
            ]
        }
    }
}
],

```



```

    "specialty": [{
      "coding": [{
        "system": "http://snomed.info/sct",
        "code": "9632001",
        "display": "Nursing procedure"
      }
    ]
  },
  {
    "endpoint": [{
      "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
    }
  ]
},
{
  "search": {
    "mode": "match"
  }
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/4546487987",
  "resource": {
    "resourceType": "Practitioner",
    "id": "4546487987",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with  

Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
    }
  },
  "identifier": [{
    "system": "http://hl7.org.fhir/sid/us-npi",
    "value": "9941339108"
  }], {
    "system": "http://www.acme.org/practitioners",
    "value": "25456"
  }
],
"name": [{
  "family": "John",
  "given": ["Ronald"],
  "prefix": ["Dr"]
}],
"address": [{
  "use": "home",
  "line": ["1003 Healthcare Drive"],
  "city": "Amherst",
  "state": "MA",
  "postalCode": "01002"
}],
},
{
  "search": {
    "mode": "include"
  }
}, {
  "fullUrl": "https://<datahub_server>/Endpoint/555666",
  "resource": {
    "resourceType": "Endpoint",
    "id": "555666",
    "meta": {
      "lastUpdated": "2020-07-07T13:26:22.0314215+00:00",
      "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
    },
    "language": "en-US",
    "text": {
      "status": "extensions",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative</b></p></div>"
    }
  }
}

```

```

/p><h3>Ids</h3><table class=\"grid\"><tr><td>-</td></tr><tr><td>*</td></tr></table><h3>Meta</h3><table
class=\"grid\"><tr><td>-</td></tr><tr><td>*</td></tr></table><p><b>language</b>: en-US<
/p><blockquote><p><b>Endpoint Usecase</b></p><h3>Urls</h3><table class=\"grid\"><tr><td>-</td><
/tr><tr><td>*</td></tr></table><p><b>value</b>: <span title=\"Codes: {http://terminology.hl7.org/CodeSystem
/v3-ActReason HOPERAT}\">healthcare operations</span></p></blockquote><p><b>status</b>: active<
/p><p><b>connectionType</b>: <span title=\"{http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/EndpointConnectionTypeCS rest-non-fhir}\">REST (not FHIR)</span></p><p><b>name</b>: Endpoint for Acme of
CT Portal</p><p><b>payloadType</b>: <span title=\"Codes: {http://hl7.org/fhir/us/davinci-pdex-plan-net
/CodeSystem/EndpointPayloadTypeCS NA}\">Not Applicable</span></p><p><b>address</b>: <a href=\"
https://urlofportal.acmect.com\">https://urlofportal.acmect.com</a></p></div>
},
  "extension": [{
    "url": "http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/endpoint-
usecase",
    "extension": [{
      "url": "type",
      "valueCodeableConcept": {
        "coding": [{
          "system": "http://terminology.hl7.org/CodeSystem/v3-ActReason",
          "code": "HOPERAT"
        }]
      }
    ]
  }],
  "identifier": [{
    "system": "http://www.acme.com/identifiers/patient",
    "value": "123456"
  }, {
    "system": "Tz-MDM",
    "value": "AAAA-0124-8"
  }],
  "status": "active",
  "connectionType": {
    "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/EndpointConnectionTypeCS",
    "code": "rest-non-fhir"
  },
  "name": "Endpoint for Acme of CT Portal",
  "payloadType": [{
    "coding": [{
      "system": "http://hl7.org/fhir/us/davinci-pdex-plan-net/CodeSystem
/EndpointPayloadTypeCS",
      "code": "NA"
    }]
  }],
  "address": "https://urlofportal.acmect.com"
},
"search": {
  "mode": "include"
}
}, {
  "fullUrl": "https://<datahub_server>/Endpoint/777888",
  "resource": {
    "resourceType": "Endpoint",
    "id": "777888",
    "meta": {
      "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n\t\t\tHealth Intersections
CarePlan Hub<br/>\n\t\t\tCarePlans can be uploaded to/from this loccation\n\t\t</div>"
    },
    "identifier": [{
      "system": "http://example.org/enpoint-identifier",

```

```

        "value": "epcp12"
      },
    ],
    "status": "active",
    "connectionType": {
      "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
      "code": "hl7-fhir-rest"
    },
    "name": "Health Intersections CarePlan Hub",
    "managingOrganization": {
      "reference": "Organization/example"
    },
    "contact": [{
      "system": "email",
      "value": "endpointm2@example.org",
      "use": "work"
    }
  ],
  "period": {
    "start": "2014-09-01"
  },
  "payloadType": [{
    "coding": [{
      "system": "http://hl7.org/fhir/resource-types",
      "code": "CarePlan"
    }
  ]
},
"payloadMimeType": ["application/fhir+xml"],
"address": "http://fhir3.healthintersections.com.au/open/CarePlan",
"header": ["bearer-code BASGS534s4"]
},
"search": {
  "mode": "include"
}
}, {
  "fullUrl": "https://datahub_server/Practitioner/45345345",
  "resource": {
    "resourceType": "Practitioner",
    "id": "45345345",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 5454545646, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
    },
    "identifier": [{
      "system": "http://hl7.org.fhir/sid/us-npi",
      "value": "5454545646"
    }, {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [{
    "family": "James",
    "given": ["Gordon"],
    "prefix": ["Dr"]
  }
],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
]

```

```

    },
    "search": {
      "mode": "include"
    }
  }, {
    "fullUrl": "Endpoint/urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
    "resource": {
      "resourceType": "Endpoint",
      "id": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
      "meta": {
        "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\tHealth Intersections
CarePlan Hub<br/>\n\t\t\tCarePlans can be uploaded to/from this location\n\t\t</div>"
      },
      "identifier": [{
        "system": "http://example.org/enpoint-identifier",
        "value": "epcp12"
      }],
      "status": "active",
      "connectionType": {
        "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
        "code": "hl7-fhir-rest"
      },
      "name": "Health Intersections CarePlan Hub",
      "managingOrganization": {
        "reference": "Organization/example2"
      },
      "contact": [{
        "system": "email",
        "value": "endpointm2@example.org",
        "use": "work"
      }],
      "period": {
        "start": "2014-09-01"
      },
      "payloadType": [{
        "coding": [{
          "system": "http://hl7.org/fhir/resource-types",
          "code": "CarePlan"
        }]
      }],
      "payloadMimeType": ["application/fhir+xml"],
      "address": "http://fhir3.healthintersections.com.au/open/CarePlan",
      "header": ["bearer-code BASGS534s4"]
    },
    "search": {
      "mode": "include"
    }
  }
}

```

**[base]/PractitionerRole?practitioner.identifier=[system]][value]**

CARIN BB

```
[base] / PractitionerRole ? practitioner.identifier = [system] | [value]
```

```
GET /PractitionerRole?practitioner.identifier=5454545646&_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-practitionerrole
```

```
{
  "resourceType": "Bundle",
  "id": "5b3ac83c-9af0-4a47-933b-a795a8f37f16",
  "meta": {
    "lastUpdated": "2021-01-25T17:38:06.040+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%2FStructureDefinition%2Fcarin-bb-practitionerrole&practitioner.identifier=5454545646"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "45345345",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color: gray;'>practitioner:</span> Carla Espinosa<br/><span style='color: gray;'>organization:</span> AUMC<br /><span style='color: gray;'>role:</span> Renal nurse\n        </div>"
      },
      "practitioner": {
        "reference": "Practitioner/45345345",
        "display": "Carla Espinosa"
      },
      "organization": {
        "reference": "Organization/f201",
        "display": "AUMC"
      },
      "code": [{
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "224565004",
          "display": "Renal nurse"
        }]
      }],
      "specialty": [{
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "9632001",
          "display": "Nursing procedure"
        }]
      }],
      "endpoint": [{
        "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
      }]
    }
  ]
}
```

## US Core

```
[base] / PractitionerRole ? practitioner.identifier = [system] | [value]
GET /PractitionerRole?practitioner.identifier=5454545646
{
  "resourceType": "Bundle",
  "id": "3cc8ab27-7455-4782-979a-cc3a27d5c0f3",
  "meta": {
    "lastUpdated": "2021-01-25T17:20:52.150+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?practitioner.identifier=5454545646"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "45345345",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color: gray;'>practitioner:</span> Carla Espinosa<br/><span style='color: gray;'>organization:</span> AUMC<br /><span style='color: gray;'>role:</span> Renal nurse\n          </div>"
      },
      "practitioner": {
        "reference": "Practitioner/45345345",
        "display": "Carla Espinosa"
      },
      "organization": {
        "reference": "Organization/f201",
        "display": "AUMC"
      },
      "code": [{
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "224565004",
          "display": "Renal nurse"
        }]
      }],
      "specialty": [{
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "9632001",
          "display": "Nursing procedure"
        }]
      }],
      "endpoint": [{
        "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
      }]
    }
  ]
}
```

## DaVinci PDEX Plan Net

```
[base] / PractitionerRole ? practitioner.identifier = [system] | [value]

GET /PractitionerRole?practitioner.identifier=5454545646&_profile=http://hl7.org/fhir/us/davinci-pdex-
plan-net/StructureDefinition/plannet-PractitionerRole

{
  "resourceType": "Bundle",
  "id": "cc9d69ab-3609-4a13-ab9e-74df2ae6fb79",
  "meta": {
    "lastUpdated": "2021-01-25T17:41:59.789+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%
2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-PractitionerRole&practitioner.identifier=5454545646"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "45345345",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
PractitionerRole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n                <span style=\"color:
gray;\n\">practitioner:</span> Carla Espinosa<br/><span style=\"color: gray;\n\">organization:</span> AUMC<br
/><span style=\"color: gray;\n\">role:</span> Renal nurse\n                </div>"
      },
      "practitioner": {
        "reference": "Practitioner/45345345",
        "display": "Carla Espinosa"
      },
      "organization": {
        "reference": "Organization/f201",
        "display": "AUMC"
      },
      "code": [{
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "224565004",
          "display": "Renal nurse"
        }
        ]
      }
    ]
  },
  "specialty": [{
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "9632001",
      "display": "Nursing procedure"
    }
    ]
  }
],
  "endpoint": [{
    "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
  }
]
}

```

## [base]/PractitionerRole?practitioner.identifier=[system]|[value]&\_include=PractitionerRole:practitioner&\_include=PractitionerRole:endpoint

### CARIN BB

```
[base] / PractitionerRole ? practitioner.identifier = [system] | [value] & _include = PractitionerRole :
practitioner & _include = PractitionerRole: endpoint

GET /PractitionerRole?practitioner.identifier=5454545646&_include=PractitionerRole:
practitioner&_include=PractitionerRole:endpoint&_profile=http://hl7.org/fhir/us/carin/StructureDefinition
/carin-bb-practitionerrole

{
  "resourceType": "Bundle",
  "id": "68447ac8-c8c0-431c-b5d9-cca132caf0b1",
  "meta": {
    "lastUpdated": "2021-01-25T17:39:00.455+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_include=PractitionerRole%
3Apractitioner&_include=PractitionerRole%3Aendpoint&_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%
2FStructureDefinition%2Fcarin-bb-practitionerrole&practitioner.identifier=5454545646"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "45345345",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-
practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n                <span style='color:
gray;'>practitioner:</span> Carla Espinosa<br/><span style='color: gray;'>organization:</span> AUMC<br
/><span style='color: gray;'>role:</span> Renal nurse\n                </div>"
      },
      "practitioner": {
        "reference": "Practitioner/45345345",
        "display": "Carla Espinosa"
      },
      "organization": {
        "reference": "Organization/f201",
        "display": "AUMC"
      },
      "code": [{
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "224565004",
          "display": "Renal nurse"
        }
        ]
      }
    ]
  },
  "specialty": [{
    "coding": [{
      "system": "http://snomed.info/sct",
      "code": "9632001",

```



```

        "display": "Nursing procedure"
      }
    ]
  ],
  "endpoint": [ {
    "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
  } ]
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/45345345",
  "resource": {
    "resourceType": "Practitioner",
    "id": "45345345",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 5454545646, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
    },
    "identifier": [ {
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "5454545646"
    }, {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    } ]
  },
  "name": [ {
    "family": "James",
    "given": ["Gordon"],
    "prefix": ["Dr"]
  } ],
  "address": [ {
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  } ]
},
"search": {
  "mode": "include"
}
}, {
  "fullUrl": "Endpoint/urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
  "resource": {
    "resourceType": "Endpoint",
    "id": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
    "meta": {
      "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>>\n\t\t\tHealth Intersections
CarePlan Hub<br/>\n\t\t\tCarePlans can be uploaded to/from this location\n\t\t</div>"
    },
    "identifier": [ {
      "system": "http://example.org/enpoint-identifier",
      "value": "epcp12"
    } ]
  },
  "status": "active",
  "connectionType": {

```



```

gray;">practitioner:</span> Carla Espinosa<br/><span style="color: gray;">organization:</span> AUMC<br
/><span style="color: gray;">role:</span> Renal nurse\n          </div>"
    },
    "practitioner": {
      "reference": "Practitioner/45345345",
      "display": "Carla Espinosa"
    },
    "organization": {
      "reference": "Organization/f201",
      "display": "AUMC"
    },
    "code": [{
      "coding": [{
        "system": "http://snomed.info/sct",
        "code": "224565004",
        "display": "Renal nurse"
      }
    ]
  }
],
"specialty": [{
  "coding": [{
    "system": "http://snomed.info/sct",
    "code": "9632001",
    "display": "Nursing procedure"
  }
]
}],
"endpoint": [{
  "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
}
]
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/45345345",
  "resource": {
    "resourceType": "Practitioner",
    "id": "45345345",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns="http://www.w3.org/1999/xhtml"><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 5454545646, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
    },
    "identifier": [{
      "system": "http://hl7.org.fhir/sid/us-npi",
      "value": "5454545646"
    }
  ], {
    "system": "http://www.acme.org/practitioners",
    "value": "25456"
  }
],
"name": [{
  "family": "James",
  "given": ["Gordon"],
  "prefix": ["Dr"]
}
],
"address": [{
  "use": "home",
  "line": ["1003 Healthcare Drive"],
  "city": "Amherst",
  "state": "MA",
  "postalCode": "01002"
}
]
]

```



```

{
  "resourceType": "Bundle",
  "id": "90c12284-d9e0-4e5d-9517-8a59a8588e68",
  "meta": {
    "lastUpdated": "2021-01-25T17:42:26.890+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_include=PractitionerRole%
3Apractitioner&_include=PractitionerRole%3Aendpoint&_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-
pdx-plan-net%2FStructureDefinition%2Fplannet-PractitionerRole&practitioner.identifier=5454545646"
  }],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/45345345",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "45345345",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/davinci-pdx-plan-net/StructureDefinition/plannet-
PractitionerRole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color:
gray;'>practitioner:</span> Carla Espinosa<br/><span style='color: gray;'>organization:</span> AUMC<br
/><span style='color: gray;'>role:</span> Renal nurse\n          </div>"
      },
      "practitioner": {
        "reference": "Practitioner/45345345",
        "display": "Carla Espinosa"
      },
      "organization": {
        "reference": "Organization/f201",
        "display": "AUMC"
      },
      "code": [{
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "224565004",
          "display": "Renal nurse"
        }]
      }],
      "specialty": [{
        "coding": [{
          "system": "http://snomed.info/sct",
          "code": "9632001",
          "display": "Nursing procedure"
        }]
      }],
      "endpoint": [{
        "reference": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d"
      }]
    }
  ], {
    "fullUrl": "https://<datahub_server>/Practitioner/45345345",
    "resource": {
      "resourceType": "Practitioner",
      "id": "45345345",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
      },
      "text": {

```

```

        "status": "generated",
        "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 5454545646, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
    },
    "identifier": [{
        "system": "http://hl7.org/fhir/sid/us-npi",
        "value": "5454545646"
    }, {
        "system": "http://www.acme.org/practitioners",
        "value": "25456"
    }
    ],
    "name": [{
        "family": "James",
        "given": ["Gordon"],
        "prefix": ["Dr"]
    }
    ],
    "address": [{
        "use": "home",
        "line": ["1003 Healthcare Drive"],
        "city": "Amherst",
        "state": "MA",
        "postalCode": "01002"
    }
    ],
    "search": {
        "mode": "include"
    }
}, {
    "fullUrl": "Endpoint/urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
    "resource": {
        "resourceType": "Endpoint",
        "id": "urn:uuid:04121321-4af5-424c-a0e1-ed3aab1c349d",
        "meta": {
            "profile": ["http://hl7.org/fhir/StructureDefinition/Endpoint"]
        },
        "text": {
            "status": "generated",
            "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n\t\t\tHealth Intersections
CarePlan Hub<br/>\n\t\t\tCarePlans can be uploaded to/from this loccation\n\t\t</div>"
        },
        "identifier": [{
            "system": "http://example.org/enpoint-identifier",
            "value": "epcp12"
        }
        ],
        "status": "active",
        "connectionType": {
            "system": "http://terminology.hl7.org/CodeSystem/endpoint-connection-type",
            "code": "hl7-fhir-rest"
        },
        "name": "Health Intersections CarePlan Hub",
        "managingOrganization": {
            "reference": "Organization/example2"
        },
        "contact": [{
            "system": "email",
            "value": "endpointm2@example.org",
            "use": "work"
        }
        ],
        "period": {
            "start": "2014-09-01"
        },
        "payloadType": [{
            "coding": [{
                "system": "http://hl7.org/fhir/resource-types",

```

```

        "code": "CarePlan"
      }
    ],
    "payloadMimeType": ["application/fhir+xml"],
    "address": "http://fhir3.healthintersections.com.au/open/CarePlan",
    "header": ["bearer-code BASGS534s4"]
  },
  "search": {
    "mode": "include"
  }
}
}
}

```

## [base]/PractitionerRole?practitioner.name=XXXX

### CARIN BB

```

[base] / PractitionerRole ? practitioner.name = XXXX

GET /PractitionerRole?practitioner.name=Gordon&_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-practitionerrole

{
  "resourceType": "Bundle",
  "id": "e4cc4b67-d431-483f-81e3-6819b0136531",
  "meta": {
    "lastUpdated": "2021-01-25T17:39:51.113+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%2FStructureDefinition%2Fcarin-bb-practitionerrole&practitioner.name=Gordon"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=e4cb6ded-78bc-57fa-805e-a36d92d1d772&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/5657575-0",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "5657575-0",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color: gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br /><span style='color: gray;'>role:</span> Care role\n          </div>"
      },
      "practitioner": {
        "reference": "Practitioner/5657575",
        "display": "James Gordon"
      },
      "organization": {
        "reference": "Organization/f001",
        "display": "BMC"
      }
    }
  ]
}

```

```

    },
    "code": [
      {
        "coding": [
          {
            "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
            "code": "01.000",
            "display": "Arts"
          }
        ],
        "text": "Care role"
      }
    ],
    "specialty": [
      {
        "coding": [
          {
            "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
            "code": "01.011",
            "display": "Oncology surgery"
          }
        ],
        "text": "specialization"
      }
    ]
  }, {
    "fullUrl": "https://<datahub_server>/PractitionerRole/444444",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "444444",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/car/StructureDefinition/car-practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color: gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br /><span style='color: gray;'>role:</span> Care role\n        </div>"
      },
      "practitioner": {
        "reference": "Practitioner/5657575",
        "display": "James Gordon"
      },
      "organization": {
        "reference": "Organization/f001",
        "display": "BMC"
      },
      "code": [
        {
          "coding": [
            {
              "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
              "code": "01.000",
              "display": "Arts"
            }
          ],
          "text": "Care role"
        }
      ],
      "specialty": [
        {
          "coding": [
            {
              "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
              "code": "363LP2300X",
              "display": "Primary Care"
            }
          ],
          "text": "specialization"
        }
      ]
    }
  }
}

```



## US Core

```
[base] / PractitionerRole ? practitioner.name = XXXX

GET /PractitionerRole?practitioner.name=Gordon

{
  "resourceType": "Bundle",
  "id": "ee0e0870-8c75-4757-b350-13f7aa930e2d",
  "meta": {
    "lastUpdated": "2021-01-25T17:21:49.610+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/PractitionerRole?_include=PractitionerRole%3Apractitioner&practitioner.name=Gordon"
    }, {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=bc503211-93ab-5871-b115-2761489133b1&_getpagesoffset=2&_count=2&_pretty=true&_include=PractitionerRole%3Apractitioner&_bundletype=searchset"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/PractitionerRole/5657575-0",
      "resource": {
        "resourceType": "PractitionerRole",
        "id": "5657575-0",
        "meta": {
          "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole"]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color: gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br /><span style='color: gray;'>role:</span> Care role\n          </div>"
        },
        "practitioner": {
          "reference": "Practitioner/5657575",
          "display": "James Gordon"
        },
        "organization": {
          "reference": "Organization/f001",
          "display": "BMC"
        },
        "code": [
          {
            "coding": [
              {
                "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
                "code": "01.000",
                "display": "Arts"
              }
            ],
            "text": "Care role"
          }
        ],
        "specialty": [
          {
            "coding": [
              {
                "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
                "code": "01.011",
                "display": "Oncology surgery"
              }
            ],
            "text": "specialization"
          }
        ]
      }
    }
  ]
}
```

```

    "fullUrl": "https://<datahub_server>/PractitionerRole/444444",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "444444",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color: gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br /><span style='color: gray;'>role:</span> Care role\n        </div>"
      },
      "practitioner": {
        "reference": "Practitioner/5657575",
        "display": "James Gordon"
      },
      "organization": {
        "reference": "Organization/f001",
        "display": "BMC"
      },
      "code": [{
        "coding": [{
          "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
          "code": "01.000",
          "display": "Arts"
        }
        ],
        "text": "Care role"
      }
    ],
    "specialty": [{
      "coding": [{
        "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
        "code": "363LP2300X",
        "display": "Primary Care"
      }
      ],
      "text": "specialization"
    }
  ]
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/5657575",
  "resource": {
    "resourceType": "Practitioner",
    "id": "5657575",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456</p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p></div>"
    },
    "identifier": [{
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "9941339108"
    }
    ], {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [{
    "family": "John",
    "given": ["Gordon"],
    "prefix": ["Dr"]
  }
  ]
},
],

```

```

        "address": [{
            "use": "home",
            "line": ["1003 Healthcare Drive"],
            "city": "Amherst",
            "state": "MA",
            "postalCode": "01002"
        }
    ],
    "search": {
        "mode": "include"
    }
}

```

## DaVinci PDEX Plan Net

```

[base] / PractitionerRole ? practitioner.name = XXXX

GET /PractitionerRole?practitioner.identifier=5454545646&_profile=http://hl7.org/fhir/us/davinci-pdex-
plan-net/StructureDefinition/plannet-PractitionerRole

{
  "resourceType": "Bundle",
  "id": "1bf2cb19-9951-443e-9fb5-0a13aebb2394",
  "meta": {
    "lastUpdated": "2021-01-25T17:42:15.527+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%
2Fdavinci-pdex-plan-net%2FStructureDefinition%2Fplannet-PractitionerRole&practitioner.name=Gordon"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=c91883d3-5a9d-5f51-b2da-
cf126cbb82ff&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/5657575-0",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "5657575-0",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
PractitionerRole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n                <span style='color:
gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br
/><span style='color: gray;'>role:</span> Care role\n            </div>"
      },
      "practitioner": {
        "reference": "Practitioner/5657575",
        "display": "James Gordon"
      },
      "organization": {
        "reference": "Organization/f001",
        "display": "BMC"
      },
      "code": [{
        "coding": [{
          "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
          "code": "01.000",

```



**[base]/PractitionerRole?practitioner.name=XXXX?\_include=PractitionerRole:practitioner&\_include=PractitionerRole:endpoint**

**CARIN BB**

```
[base] / PractitionerRole ? practitioner.name = XXXX ? _include = PractitionerRole : practitioner &
_include = PractitionerRole : endpoint

GET /PractitionerRole?practitioner.name=Gordon&_include=PractitionerRole:
practitioner&_include=PractitionerRole:endpoint&_profile=http://hl7.org/fhir/us/carin/StructureDefinition
/carin-bb-practitionerrole

{
  "resourceType": "Bundle",
  "id": "df547de2-c38c-4b3b-93c9-fd3bdc8365cb",
  "meta": {
    "lastUpdated": "2021-01-25T17:40:38.704+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_include=PractitionerRole%
3Apractitioner&_include=PractitionerRole%3Aendpoint&_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fcarin%
2FStructureDefinition%2Fcarin-bb-practitionerrole&practitioner.name=Gordon"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=200b2a88-c84b-58e9-8f4f-
92449fe3cfba&_getpagesoffset=2&_count=2&_pretty=true&_include=PractitionerRole%
3Aendpoint&_include=PractitionerRole%3Apractitioner&_bundletype=searchset"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/5657575-0",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "5657575-0",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-
practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\\">\n          <span style=\\"color:
gray;\\">practitioner:</span> Pieter Voigt<br/><span style=\\"color: gray;\\">organization:</span> BMC<br
/><span style=\\"color: gray;\\">role:</span> Care role\n          </div>"
      },
      "practitioner": {
        "reference": "Practitioner/5657575",
        "display": "James Gordon"
      },
      "organization": {
        "reference": "Organization/f001",
        "display": "BMC"
      },
      "code": [{
        "coding": [{
          "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
          "code": "01.000",
          "display": "Arts"
        }
        ],
        "text": "Care role"
      }
    ]
  },
  "specialty": [{
```

```

        "coding": [{
            "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
            "code": "01.011",
            "display": "Oncology surgery"
        }
    ],
    "text": "specialization"
}
]
}, {
    "fullUrl": "https://<datahub_server>/PractitionerRole/444444",
    "resource": {
        "resourceType": "PractitionerRole",
        "id": "444444",
        "meta": {
            "profile": ["http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-
practitionerrole"]
        },
        "text": {
            "status": "generated",
            "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n                <span style='color:
gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br
/><span style='color: gray;'>role:</span> Care role\n            </div>"
        },
        "practitioner": {
            "reference": "Practitioner/5657575",
            "display": "James Gordon"
        },
        "organization": {
            "reference": "Organization/f001",
            "display": "BMC"
        },
        "code": [{
            "coding": [{
                "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
                "code": "01.000",
                "display": "Arts"
            }
        ],
        "text": "Care role"
    }
],
    "specialty": [{
        "coding": [{
            "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
            "code": "363LP2300X",
            "display": "Primary Care"
        }
    ],
    "text": "specialization"
}
]
}, {
    "fullUrl": "https://<datahub_server>/Practitioner/5657575",
    "resource": {
        "resourceType": "Practitioner",
        "id": "5657575",
        "meta": {
            "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
        },
        "text": {
            "status": "generated",
            "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
        },
        "identifier": [{
            "system": "http://hl7.org.fhir/sid/us-npi",

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```

        "value": "9941339108"
      }, {
        "system": "http://www.acme.org/practitioners",
        "value": "25456"
      }
    ],
    "name": [{
      "family": "John",
      "given": ["Gordon"],
      "prefix": ["Dr"]
    }
  ],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }
],
},
"search": {
  "mode": "include"
}
}
]
}

```

## US Core

```
[base] / PractitionerRole ? practitioner.name = XXXX ? _include = PractitionerRole : practitioner &
_include = PractitionerRole : endpoint
```

```
GET /PractitionerRole?practitioner.name=Gordon&_include=PractitionerRole:
practitioner&_include=PractitionerRole:endpoint
```

```

{
  "resourceType": "Bundle",
  "id": "81994928-3696-4674-a188-cc97d664b0ad",
  "meta": {
    "lastUpdated": "2021-01-25T17:22:33.228+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_include=PractitionerRole%
3Apractitioner&_include=PractitionerRole%3Aendpoint&practitioner.name=Gordon"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=f4cbab25-2724-5b18-86b0-
0dee73fe3e42&_getpagesoffset=2&_count=2&_pretty=true&_include=PractitionerRole%
3Aendpoint&_include=PractitionerRole%3Apractitioner&_bundletype=searchset"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/5657575-0",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "5657575-0",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'\>\n          <span style='color:
gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br
/><span style='color: gray;'>role:</span> Care role\n          </div>"
      }
    }
  ]
}

```

```

    },
    "practitioner": {
      "reference": "Practitioner/5657575",
      "display": "James Gordon"
    },
    "organization": {
      "reference": "Organization/f001",
      "display": "BMC"
    },
    "code": [{
      "coding": [{
        "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
        "code": "01.000",
        "display": "Arts"
      }
    ],
      "text": "Care role"
    }
  ],
  "specialty": [{
    "coding": [{
      "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
      "code": "01.011",
      "display": "Oncology surgery"
    }
  ],
    "text": "specialization"
  }
]
}, {
  "fullUrl": "https://datahub_server/PractitionerRole/444444",
  "resource": {
    "resourceType": "PractitionerRole",
    "id": "444444",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color: gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br /><span style='color: gray;'>role:</span> Care role\n          </div>"
    },
    "practitioner": {
      "reference": "Practitioner/5657575",
      "display": "James Gordon"
    },
    "organization": {
      "reference": "Organization/f001",
      "display": "BMC"
    },
    "code": [{
      "coding": [{
        "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
        "code": "01.000",
        "display": "Arts"
      }
    ],
      "text": "Care role"
    }
  ],
  "specialty": [{
    "coding": [{
      "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
      "code": "363LP2300X",
      "display": "Primary Care"
    }
  ],
    "text": "specialization"
  }
]
}

```



```

    ], {
      "fullUrl": "https://<datahub_server>/Practitioner/5657575",
      "resource": {
        "resourceType": "Practitioner",
        "id": "5657575",
        "meta": {
          "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\"><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
        },
        "identifier": [{
          "system": "http://hl7.org.fhir/sid/us-npi",
          "value": "9941339108"
        }, {
          "system": "http://www.acme.org/practitioners",
          "value": "25456"
        }
      ],
      "name": [{
        "family": "John",
        "given": ["Gordon"],
        "prefix": ["Dr"]
      }
    ],
    "address": [{
      "use": "home",
      "line": ["1003 Healthcare Drive"],
      "city": "Amherst",
      "state": "MA",
      "postalCode": "01002"
    }
  ],
  "search": {
    "mode": "include"
  }
}
]
}

```

## DaVinci PDEX Plan Net

```

[base] / PractitionerRole ? practitioner.name = XXXX ? _include = PractitionerRole : practitioner &
_include = PractitionerRole : endpoint

GET /PractitionerRole?practitioner.name=Gordon&_include=PractitionerRole:
practitioner&_include=PractitionerRole:endpoint&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net
/StructureDefinition/plannet-PractitionerRole

{
  "resourceType": "Bundle",
  "id": "9c124035-3a73-441f-96f0-ea883b2abc4a",
  "meta": {
    "lastUpdated": "2021-01-25T17:42:18.360+00:00"
  },
  "type": "searchset",
  "total": 3,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/PractitionerRole?_include=PractitionerRole%

```

```

3Apractitioner&_include=PractitionerRole%3Aendpoint&_profile=http%3A%2F%2Fhl7.org%2Ffhir%2Fus%2Fdavinci-
pdex-plan-net%2FStructureDefinition%2Fplannet-PractitionerRole&practitioner.name=Gordon"
    }, {
      "relation": "next",
      "url": "https://<datahub_server>?_getpages=e737f8af-8d20-539b-8193-
190d7e5dc156&_getpagesoffset=2&_count=2&_pretty=true&_include=PractitionerRole%
3Aendpoint&_include=PractitionerRole%3Apractitioner&_bundletype=searchset"
    }
  ],
  "entry": [{
    "fullUrl": "https://<datahub_server>/PractitionerRole/5657575-0",
    "resource": {
      "resourceType": "PractitionerRole",
      "id": "5657575-0",
      "meta": {
        "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
PractitionerRole"]
      },
      "text": {
        "status": "generated",
        "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color:
gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br
/><span style='color: gray;'>role:</span> Care role\n          </div>"
      },
      "practitioner": {
        "reference": "Practitioner/5657575",
        "display": "James Gordon"
      },
      "organization": {
        "reference": "Organization/f001",
        "display": "BMC"
      },
      "code": [{
        "coding": [{
          "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
          "code": "01.000",
          "display": "Arts"
        }
        ],
        "text": "Care role"
      }
    ],
    "specialty": [{
      "coding": [{
        "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
        "code": "01.011",
        "display": "Oncology surgery"
      }
      ],
      "text": "specialization"
    }
  ]
}, {
  "fullUrl": "https://<datahub_server>/PractitionerRole/444444",
  "resource": {
    "resourceType": "PractitionerRole",
    "id": "444444",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-
PractitionerRole"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n          <span style='color:
gray;'>practitioner:</span> Pieter Voigt<br/><span style='color: gray;'>organization:</span> BMC<br
/><span style='color: gray;'>role:</span> Care role\n          </div>"
    },
    "practitioner": {
      "reference": "Practitioner/5657575",
      "display": "James Gordon"
    }
  }
}

```

```

    },
    "organization": {
      "reference": "Organization/f001",
      "display": "BMC"
    },
    "code": [{
      "coding": [{
        "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
        "code": "01.000",
        "display": "Arts"
      }],
      "text": "Care role"
    }],
    "specialty": [{
      "coding": [{
        "system": "urn:oid:2.16.840.1.113883.2.4.15.111",
        "code": "363LP2300X",
        "display": "Primary Care"
      }],
      "text": "specialization"
    }],
  ],
}, {
  "fullUrl": "https://<datahub_server>/Practitioner/5657575",
  "resource": {
    "resourceType": "Practitioner",
    "id": "5657575",
    "meta": {
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner"]
    },
    "text": {
      "status": "generated",
      "div": "<div xmlns='http://www.w3.org/1999/xhtml'><p><b>Generated Narrative with
Details</b></p><p><b>id</b>: practitioner-1</p><p><b>meta</b>: </p><p><b>identifier</b>: 9941339108, 25456<
/p><p><b>name</b>: Ronald Bone </p><p><b>address</b>: 1003 Healthcare Drive Amherst MA 01002 (HOME)</p><
/div>"
    },
    "identifier": [{
      "system": "http://hl7.org/fhir/sid/us-npi",
      "value": "9941339108"
    }], {
      "system": "http://www.acme.org/practitioners",
      "value": "25456"
    }
  ],
  "name": [{
    "family": "John",
    "given": ["Gordon"],
    "prefix": ["Dr"]
  }],
  "address": [{
    "use": "home",
    "line": ["1003 Healthcare Drive"],
    "city": "Amherst",
    "state": "MA",
    "postalCode": "01002"
  }],
},
"search": {
  "mode": "include"
}
}
]
}

```

---

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# Procedure

## Use Case

A member uses a mobile application to see what procedures have already been performed for a condition for which they have sought treatment. The application UI calls an external endpoint which returns the procedure information associated with the member in an industry-standard format. The application translates the information and displays it to the member.

## Supported GET Requests

- GET [base]/Procedure?patient=[reference]
- GET [base]/Procedure?patient=[reference]&date={gt|lt|ge|le}[date]&date={gt|lt|ge|le}[date]

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Procedure Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

# Sample Requests and Responses

[base]/Procedure?patient=[reference]

```
[base] / Procedure ? patient = [reference]

GET    /Procedure?patient=100003095

{
  "resourceType": "Bundle",
  "id": "15eb63ac-4fd9-4a20-82c0-c29d8706f6e5",
  "meta": {
    "lastUpdated": "2021-01-25T00:19:42.823+00:00"
  },
  "type": "searchset",
  "total": 199,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Procedure?patient=100003095"
  }, {
    "relation": "next",
    "url": "https://<datahub_server>?_getpages=b95e12c5-5595-5f83-8f9e-73183ea8b40f&_getpagesoffset=2&_count=2&_pretty=true&_bundletype=searchset"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Procedure/100003095-146",
    "resource": {
      "resourceType": "Procedure",
      "id": "100003095-146",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2020-10-29T09:05:45.724+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-procedure"],
        "tag": [{
          "system": "tranzform-apim-request-ns",
          "code": "user-request-id",
          "display": "b7dba6aa-52cc-4605-8821-b6e8488f2f82\t\t\t224"
        }
      ]
    },
    "identifier": [{
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "100003095-146"
    }
  ],
  "status": "completed",
  "code": {
    "coding": [{
      "code": "99284",
      "display": "Counseling and/or coordination of care with other"
    }
  ]
},
  "subject": {
    "reference": "Patient/100003095"
  },
  "encounter": {
    "reference": "Encounter/190790030500"
  },
  "performedPeriod": {
    "start": "2019-03-02",
    "end": "2019-03-02"
  }
}
}
```



```

],
"entry": [{
  "fullUrl": "https://<datahub_server>/Procedure/100003095-146",
  "resource": {
    "resourceType": "Procedure",
    "id": "100003095-146",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-10-29T09:05:45.724+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-procedure"],
      "tag": [{
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "b7dba6aa-52cc-4605-8821-b6e8488f2f82\t\t\t224"
      }
    ]
  },
  "identifier": [{
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "100003095-146"
  }
],
  "status": "completed",
  "code": {
    "coding": [{
      "code": "99284",
      "display": "Counseling andor coordination of care with other"
    }
  ]
},
  "subject": {
    "reference": "Patient/100003095"
  },
  "encounter": {
    "reference": "Encounter/190790030500"
  },
  "performedPeriod": {
    "start": "2019-03-02",
    "end": "2019-03-02"
  }
}
], {
  "fullUrl": "https://<datahub_server>/Procedure/100003095-131",
  "resource": {
    "resourceType": "Procedure",
    "id": "100003095-131",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2020-10-29T09:05:49.771+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-procedure"],
      "tag": [{
        "system": "tranzform-apim-request-ns",
        "code": "user-request-id",
        "display": "b7dba6aa-52cc-4605-8821-b6e8488f2f82\t\t\t209"
      }
    ]
  },
  "identifier": [{
    "use": "official",
    "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
    "value": "100003095-131"
  }
],
  "status": "completed",
  "code": {
    "coding": [{
      "code": "71046",
      "display": "Radiological examination chest 2 views"
    }
  ]
}
]

```



```
    },
    "subject": {
      "reference": "Patient/100003095"
    },
    "encounter": {
      "reference": "Encounter/190660043100"
    },
    "performedPeriod": {
      "start": "2019-03-02",
      "end": "2019-03-02"
    }
  }
}
```

---

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# Provenance

## Use Case

The Provenance resource is used to create an audit trail of changes. It tracks information about the activity that either created, revised, deleted, or signed each version of a resource. It includes the agents and entities involved in the change. This information can be used to access the trustworthiness or quality of the information. It can also provide pointers of how to further investigate the origins of the resource and the information contained within it.

## Supported GET Requests

- GET [base]/AllergyIntolerance?patient=[reference]&\_revinclude=Provenance:target
- GET [base]/CareTeam?patient=[reference]&\_revinclude=Provenance:target
- GET [base]/Condition?patient=[reference]&\_revinclude=Provenance:target
- GET [base]/Encounter?patient=[reference]&\_revinclude=Provenance:target
- GET [base]/Immunization?patient=[reference]&\_revinclude=Provenance:target
- GET [base]/MedicationRequest?patient=[reference]&\_revinclude=Provenance:target
- GET [base]/Observation?patient=[reference]&\_revinclude=Provenance:target
- GET [base]/Procedure?patient=[reference]&\_revinclude=Provenance:target
- GET [base]/CarePlan?patient=[reference]&\_revinclude=Provenance:target

## Response Parameters

The response parameters for the GET method are as follows:

- [US Core Provenance Profile](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have

	sufficient privileges to access the data.
404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[\[base\]/Encounter?patient=\[reference\]&\\_revinclude=Provenance:target](#)

```
[base] / Encounter ? patient = [reference] & _revinclude = Provenance : target
GET    /Encounter?patient=5639&_revinclude=Provenance:target

{
  "resourceType": "Bundle",
  "id": "8e45f9fb-f5f3-4a1f-a782-bb5bc35080cd",
  "meta": {
    "lastUpdated": "2021-01-26T00:12:57.264+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [{
    "relation": "self",
    "url": "https://<datahub_server>/Encounter?_revinclude=Provenance%3Atarget&patient=5639"
  }
],
  "entry": [{
    "fullUrl": "https://<datahub_server>/Encounter/65984345",
    "resource": {
      "resourceType": "Encounter",
      "id": "65984345",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2021-01-07T07:58:01.964+00:00",
        "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter"]
      },
      "identifier": [{
        "system": "YourEHR:tenant4",
        "value": "65984345"
      }, {
        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "65984345"
      }
    ],
    "status": "in-progress",
    "class": {
      "code": "IMP"
    },
    "subject": {
      "reference": "Patient/5639"
    },
    "participant": [{
      "individual": {
        "reference": "Practitioner/74"
      }
    }, {
      "individual": {
        "reference": "Practitioner/60571"
      }
    }
  }
]
```

```

    },
    "period": {
      "start": "2021-01-06T20:20:00.000+05:30"
    }
  },
  "search": {
    "mode": "match"
  }
}, {
  "fullUrl": "https://<datahub_server>/Provenance/1230025",
  "resource": {
    "resourceType": "Provenance",
    "id": "1230025",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2021-01-07T07:58:02.152+00:00",
      "profile": ["http://hl7.org/fhir/us/core/StructureDefinition/us-core-provenance"],
      "tag": [{
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "code": "official",
        "display": "1230025"
      }]
    },
    "target": [
      {
        "reference": "Patient/5639"
      }, {
        "reference": "Practitioner/74"
      }, {
        "reference": "Practitioner/60571"
      }, {
        "reference": "Encounter/65984345"
      }
    ],
    "recorded": "2021-01-07T09:13:31.309",
    "reason": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/v3-ActReason",
            "code": "HCOMPL",
            "display": "health compliance"
          }
        ]
      }
    ],
    "agent": [
      {
        "type": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/provenance-participant-type",
              "code": "custodian"
            }
          ]
        },
        "who": {
          "reference": "Patient/5639"
        }
      }, {
        "type": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/provenance-participant-type",
              "code": "author"
            }
          ]
        },
        "who": {
          "reference": "Practitioner/74"
        }
      }
    ]
  }
}

```

```

        "coding": [{
            "system": "http://terminology.hl7.org/CodeSystem/provenance-participant-
type",
            "code": "author"
        }],
        "who": {
            "reference": "Practitioner/60571"
        }
    }, {
        "type": {
            "coding": [{
                "system": "http://terminology.hl7.org/CodeSystem/provenance-participant-
type",
                "code": "transmitter"
            }],
            "who": {
                "reference": "Patient/5639"
            }
        }
    },
    "search": {
        "mode": "include"
    }
}

```

---

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# RelatedPerson

## Use Case

RelatedPersons typically have a personal or non-healthcare-specific professional relationship to the patient. A RelatedPerson resource is often a source of information about the patient.

But for those individuals who you want to contact for a patient, you would use the Patient's Contact element.

Individuals may serve as both a Patient's Contact and a Related Person.

Example RelatedPersons are:

- A patient's wife or husband
- A patient's relatives or friends
- A neighbor bringing a patient to the hospital
- A patient's attorney or guardian

## Supported GET Requests

- GET [base]/RelatedPerson?identifier={system|}[value]
- GET [base]/RelatedPerson?patient=[reference]

## Response Parameters

The response parameters for the GET method are as follows:

- [CARIN BB](#)

## Error Codes

### Definition of error codes

Error Code	Reason
204	Consent is enabled, but no data found.
206	Partial response has been returned when hybrid configuration is enabled.
400	Bad request. Resource could not be parsed or failed basic FHIR validation rules.
401	Unauthenticated. A valid token was not sent in the request.
403	Unauthorized to access the data. This occurs when consent is enabled, but the user does not have sufficient privileges to access the data.

404	An empty bundle is returned.
422	Unprocessable entity. The proposed resource violated FHIR profiles or server business rules.
500	Internal server error.

## Sample Requests and Responses

[base]/RelatedPerson?identifier={system|}[value]

```
[base]/RelatedPerson?identifier={system|}[value]
GET [base]/RelatedPerson?identifier=RelatedPerson23
{
  "resourceType": "Bundle",
  "id": "b79def37-6254-4744-b41b-bb64bdb9f296",
  "meta": {
    "lastUpdated": "2021-05-04T16:25:53.499+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/datahub/fhir/RelatedPerson?identifier=RelatedPerson23"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/datahub/fhir/RelatedPerson/RelatedPerson23",
      "resource": {
        "resourceType": "RelatedPerson",
        "id": "RelatedPerson23",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T23:57:06.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-relatedperson"
          ],
          "tag": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/common-tags",
              "code": "user-request-id",
              "display": "14f7f303-dc67-4c91-882d-a894b12e0b6a\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\">\n\t\t\t<p>\n\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t</p>\n\t\t\t\t</div>"
        },
        "identifier": [
          {
            "id": "subscriberid",
            "type": {
              "coding": [
                {
                  "code": "SN"
                }
              ]
            }
          }
        ]
      }
    }
  ]
}
```

```

        "use": "official",
        "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
        "value": "RelatedPerson23"
      }
    ],
    "patient": {
      "reference": "Patient/Patient1"
    }
  }
}

```

### [base]/RelatedPerson?patient=[reference]

[base]/RelatedPerson?patient=[reference]

GET https://[base]/RelatedPerson?patient=Patient1

```

{
  "resourceType": "Bundle",
  "id": "da788dfb-41dc-4209-af2f-ebf254792110",
  "meta": {
    "lastUpdated": "2021-05-04T16:18:29.886+00:00"
  },
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://<datahub_server>/datahub/fhir/RelatedPerson?patient=Patient1"
    }
  ],
  "entry": [
    {
      "fullUrl": "https://<datahub_server>/datahub/fhir/RelatedPerson/RelatedPerson23",
      "resource": {
        "resourceType": "RelatedPerson",
        "id": "RelatedPerson23",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2019-12-18T23:57:06.000-05:00",
          "profile": [
            "http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-relatedperson"
          ],
          "tag": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/common-tags",
              "code": "user-request-id",
              "display": "14f7f303-dc67-4c91-882d-a894b12e0b6a\t\t\t1"
            }
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='http://www.w3.org/1999/xhtml'>\n\t\t\t<p>\n\t\t\t\t\t<b>Generated Narrative with Details</b>\n\t\t\t\t\t</p>\n\t\t\t\t\t</div>"
        },
        "identifier": [
          {
            "id": "subscriberid",
            "type": {
              "coding": [
                {
                  "code": "SN"
                }
              ]
            }
          }
        ]
      }
    }
  ]
}

```



```
    },
    {
      "use": "official",
      "system": "com.cognizant.tranzform.fhir.identifiers.logical-identifier",
      "value": "RelatedPerson23"
    }
  ],
  "patient": {
    "reference": "Patient/Patient1"
  }
}
```

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