Using the Developer Portal

Using the Developer Portal

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

Start Here

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 login. 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.

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. Sign up for a developer account.
   c. 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 Developer Portal Usage Quick Start Reference.

API Sandbox Testing Information and Dataset

See API Sandbox Test Data.

Supported Browsers

Table 1. Supported Browsers

Browser	Supported
Apple Safari	Yes[1]
Google Chrome	Yes[1]
Microsoft Edge	Yes[1]
Microsoft Internet Explorer	No
Mozilla Firefox	Yes[1]

[1] Supported in the two latest production versions.

The Developer Portal is available from any operating system.

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.

Download the spreadsheet: Sandbox-Test-Data.xlsx.

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&stat us=active
/Location?provider=IHMPRAC00005
/Location?provider=IHMPRAC00005&_profile=http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Location
/Location?identifier=FACETS:tenant4%7CIHMPRAC00005
/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/carin/StructureDefinition/carin-bb-organization
/Organization?name=FHFSA302
/Organization?name=FHFSA302&_profile=http://hl7.org/fhir/us/carin/StructureDefinition/carin-bb-organization
/OrganizationAffiliation?identifier=383621801
/InsurancePlan?identifier=P2HR
/Endpoint/OrganizationAffiliation
/Endpoint?name=Practitioner

Data Hub

PatientID	Ptp07
PractitionerID	Pracp07
PracRole identifier	PracRolep07
Location identifier	Locp07
Organization identifier	Orgp07
CareTeam Patient	Ptp07
Encounter /Id	Encp04
Allergy intol Patient	Ptp07
Condition Patient	Ptp07
Immunization Patient	Ptp07
Medication Request Patient	Ptp07
Observation Patient	Ptp07
CarePlan Patient	Ptp07
Medication identifier	Medp07
Claim Patient	Ptp07
Procedure Patient	Ptp07
DiagnosticReport Patient	Ptp07
DocumentReference Patient	Ptp07
Device Patient	Ptp07
Goal Patient	Ptp07
Coverage Patient	Ptp07
EOB Patient	Ptp07

Viewing API Endpoints

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 Identify 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 **SIGN UP**.
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 **RESET**.
    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 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.

For example test data, see: API Testing Information and Dataset.

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 Products 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 **SUBSCRIBE**.
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

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** at the right edge of the page.
3. The **Try It** tool pops out from the right. Fill in required input and header parameters. You may need to provide your subscription key and bearer token. Sample data is provided in API Sandbox Test Data.
4. Scroll to the bottom of the **Try It** tool and click **Send**.
5. 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

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

For example test data, see: API Testing Information and Dataset.

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.tzfInterOp.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.tzfInterOp.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.tzfInterOp.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.tzfInterOp.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

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 Account Management 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 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 **CHANGE**.

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. 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:

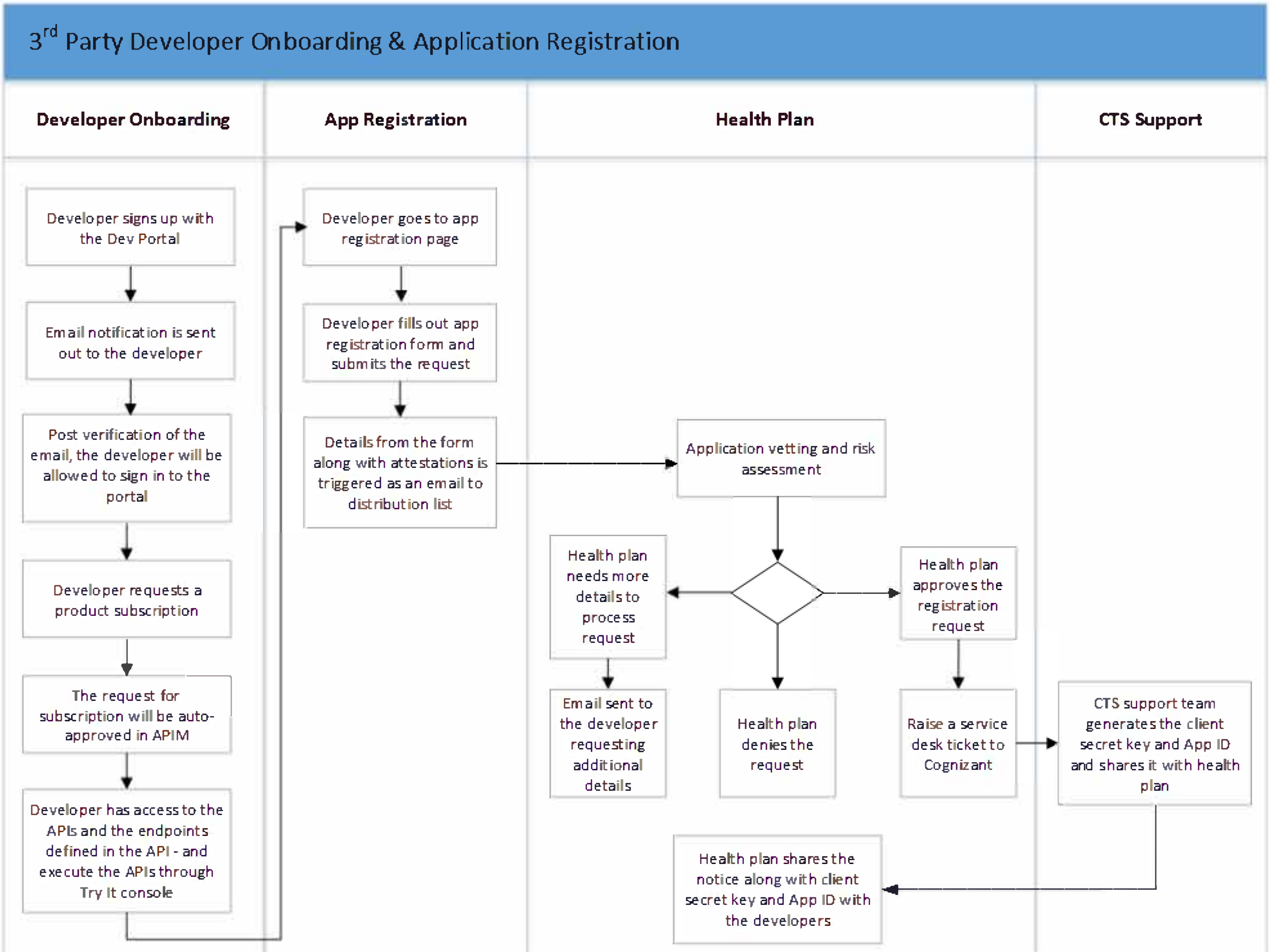
Table 1. Checklist for Preparing to Register an Application

Category	Information
OAuth redirection	Call back URL and Redirect URI.
OAuth type	Public vs. Confidential. **Confidential** applications can keep the client ID and client secret secure. **Public** 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 the application registration, 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**. If you select **Sandbox**, you see fields for the **APP NAME** and **APP DESCRIPTION**.

   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**.

   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 **SUBMIT**.

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

If approved, 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

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 developers 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.

Developer Portal Usage Quick Start Reference

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. Login to 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.