Human API Reports

Integration guide

Table of content

What are reports?

Reports are distinct representations of electronic health records. Different reports are designed to serve different use cases. Human readable reports are available in PDF or HTML while reports for programmatic use cases are available as JSON.

Reports are compiled shortly after we get an authorization from an individual and retrieve the data from their healthcare providers. There are several ways for developers to know exactly when a report is available to download.

There are different ways to download a report. Either manually from our Enterprise Portal or automatically, using the API or an automated "push" delivery system.

Example report rendered as a PDF document.

Types of available reports and formats

You may want the data to be organized and presented differently to meet your use case. You may need to see the entirety of a patient's medical record or a concise version. You may want to have the data organized historically or grouped by types. You may want to surface specific details only, such as lab results.

We provide a set of standard reports representing the same underlying patient medical record. You can download the reports in JSON, HTML or PDF.

Below, a list of the standard reports that we make available.

Code	Description	Available formats		
		JSON	HTML	PDF
unity	**Health summary** A concise longitudinal view of the patient's key medical data that is divided into sections including: - Demographics, social history, list of prescriptions, conditions, procedures and vitals. - List of Encounters including reason for visit and associated diagnoses for in-person and remote care. - Test results. This report is built separately for each healthcare provider. Each provider authorized by the end consumer will have their own report.	✓	✓	✓
ccdraw	**Complete medical record** The entire medical record of a patient , directly rendered from the CCD-A documents. This report renders the data as close as it can get to the original charts retrieved from the source EHR. This report is generated only when the user connects a data source that provides CCDA files. It's typically not available from pharmacies or independent lab networks. This report is built separately for each healthcare provider. Each provider authorized by the end consumer may have their own report.		✓	✓

HUMAN API

apidata	**Bulk export of the clinical API** This report aggregates the output of the main clinical API endpoints for a given individual. It's equivalent to calling all the Clinical API endpoints (except ccd and narratives) and concatenating the responses together.	✓		
timeline	**Chronological health history** This is a longitudinal view of a user's data organized in a timeline.	✓		

Table 1 : List of standard reports

The standard report set covers the majority of use cases. If you don't find what you need in this list, you can either request a custom report, or build your own. We're happy to help in both cases.

Retrieving reports from the API

You can query our data API from your application to retrieve reports and import them into your system. We recommend this method because it's the most efficient and flexible.

Before you start : Pre-requisites

- You should have an active customer account. Make sure you already have a client application's credentials (*client_id* and *secret*), you'll need them to make authenticated API calls.
- You are able to initiate connections, either using invite links or embedding the Connect widget in your application.
- You have a [notification endpoint](#) setup and accepting requests. This is not absolutely required but we strongly recommend that you use this feature.

If you don't have one of the above, or you're not sure, please get in touch with our support engineers. We're happy to help.

Issuing authenticated calls to Human API

When you want to query a user's health data, you must first get an access token by issuing a POST request to our authentication service with your application's credentials (client_id and secret) and a client_user_id.

The request looks like this :

```
POST /v1/connect/token HTTP/1.1
Host: auth.humanapi.co
Content-Type: application/json
Cache-Control: no-cache

{
  "client_id": "your_client_id",
  "client_secret": "your_client_secret",
  "client_user_id": "unique_identifier",
  "type" : "access"
}
```

HUMAN API

Attribute	Type	Description
client_id	String	Your client application identifier, provided to you by Human API
client_secret	String	Your client application secret, provided to you by Human API
client_user_id	String	Your unique identifier of the user, such as the policy number.

Table 2 : Access token request attributes

A successful response to the request above should look like this

```
{
  "access_token": "your-access-token",
  "expires_in": 86400,
  "token_type": "Bearer",
  "refresh_token": "Rz0MpkCQVmdeDkZ3"
}
```

Attribute	Type	Description
access_token	String	The access token which you can use for authenticated calls
expires_in	Long	The token's life time, in seconds. Tokens are valid for 24 hours by default.
token_type	String	Which type of Auth header can this token be used for. Currently the value is always "Bearer"
refresh_token	String	This is reserved for future use.

Table 3 : Access token response attributes

Checking for report availability

Human API retrieves the data from Healthcare providers as soon as the user grants an authorization. The retrieval process is asynchronous by design.

When the data becomes available, within a few minutes to a few hours, we will send you notifications. Alternatively, you can check by making a request to the data API.

If you elect to use pub/sub notifications, you will know that data is available when you get a user status notification or a data notification.

User status notifications

If you have a status notification endpoint configured, we will post a notification to your endpoint whenever the user's status changes.

A user notification looks like this :

```
{
  "clientUserId":"12345678",
  "endpoint":"https://admin.humanapi.co/v1/users",
  "humanId":"ef14404e9860776f6300e3e4cb10f84a",
  "updatedAt":"2020-01-30T21:20:54.316Z",
  "property":"status",
  "value":"All Synced"
}
```

Attribute	Type	Description
clientUserId	String	Your unique identifier for the user (e.g : policy number)
endpoint	URL	The endpoint where additional information about the user is available. This is always set to "https://admin.humanapi.co/v1/users"
humanId	String	Human API's unique identifier of the user.
updatedAt	Date	The exact timestamp when the change occurred.
property	String	Set to "status" when the user's status has changed.
value	String	The user's current status.

Table 4 : Status notification payload attributes

Below, the value you may encounter for the status attribute :

Status	Description
Invited	The user record was created and an invite was sent.

HUMAN API

Engaged	The user opened the link and engaged in the authorization process.
Declined	The user explicitly declined to participate.
Syncing	The user authorized access to at least one provider and the sync operation is in progress.
All Synced	We have successfully retrieved data from all the healthcare providers.
Some Synced	We have successfully retrieved data from some of the healthcare providers.
Error	We are unable to send an invite to the user or unable to retrieve data
Attn Required	We need the user to perform an action before we proceed (such as accepting the terms and conditions in the Patient portal)
Disconnected	The user has disconnected all the providers to whom they had previously authorized access.

Table 5 : Relevant user status values

Data notifications

If you use Human API's data notifications feature, we will post a notification to your endpoint whenever a new report is available or when an existing report is updated.

Unlike user status notifications, the data notifications will tell you exactly which type of report is available. You get a separate notification for each report.

A report notification looks like this :

```
{
  "type":"unity",
  "endpoint":"https://api.humanapi.co/v1/human/medical/reports",
  "objectId":"a2549f89f15a1cf03e6b4e21",
  "updatedAt":"2020-01-30T21:20:54.316Z",
  "humanId":"4c7424188d8a750d0e15e17318775dc0",
  "action":"created"
}
```

Attribute	Type	Description
type	String	Designates the type of report.
action	String	Set to "created" or "updated" respectively when the report is created for the first time or if it's a subsequent update.

HUMAN API

endpoint	URL	The endpoint where additional information about the report is available. This is always "…/v1/human/medical/reports"
humanId	String	Human API's unique identifier of the user
updatedAt	Date	The exact timestamp of update or creation

Table 6 : Notification payload attributes

You can distinguish a report notification from others by checking the value of its "endpoint" attribute, which is always set to "https://api.humanapi.co/v1/human/medical/reports".

To identify the user, you can rely on the humanId attribute, which is supplied to you when the user was initially created.

Please remember to comply with the specifications and respond to all notifications, not just those of interest, in less than 3 seconds.

Regular polls

If you don't have notifications setup, your alternative (not recommended) is to poll the API on regular intervals to check which reports are available, if any. You can refer to the next section (Retrieving the list of available reports) to implement this solution

Retrieving the list of available reports

To get the list of all the reports available for a given user, you can issue an authenticated call to the API's /human/medical/reports endpoint.

```
GET /v1/human/medical/reports HTTP/1.1
Host: api.humanapi.co
Content-Type: application/json
Cache-Control: no-cache
Authorization: Bearer your-access-token
```

An example of a successful response to the request above, showing 2 available reports :

```
[
  {
    "id": "5e2f95696f90f40019a992b7",
    "createdAt": "2020-01-28T01:59:05.049Z",
    "updatedAt": "2020-01-28T01:59:33.312Z",
    "name": "apidata"
  },
```

HUMAN API

```
  {
    "id": "5e2f95696f90f40019a992ba",
    "createdAt": "2020-01-28T01:59:05.049Z",
    "updatedAt": "2020-01-28T01:59:33.312Z",
    "name": "unity",
    "organization": {
        "href": "/medical/organizations/5b1daf3f079c652eaf41fd23",
        "id": "5b1daf3f079c652eaf41fd23",
        "name": "Starfleet Medical"
    }
  }
]
```

Downloading a report

To get the content of a report, you can issue an authenticated call to the /human/medical/reports endpoint, identifying the report by its unique id.

Below, an example request to retrieve a PDF version of the report identified by "123456".

```
GET /v1/human/medical/reports/123456/raw?format=pdf HTTP/1.1
Host: api.humanapi.co
Content-Type: application/json
Cache-Control: no-cache
Authorization: Bearer your-access-token
```

Some reports are available in multiple formats (JSON, HTML, or PDF). To specify which format you want, you can include a query string parameter "format" and set its value to the desired format (pdf, json or html). The response body will contain the data and the "content-type" header will be set accordingly (e.g : text/html when the format is html).

If you request a report in a format that is not supported, the API will return an error response with a status code of 400 or 415.

HUMAN API

"PUSH" DELIVERY

As an alternative (or complement) to downloading data from the API, we can push the reports to your servers as soon as they are compiled.

We recommend using this automated delivery method in the following cases :

- You want the records for all the users authorizing your app.
- You have a high volume of users and you want to streamline the data delivery workflow without having to build an API integration.
- You prefer not to use the Human API portal to download health records.

This section is a step-by-step guide to configure and activate the automated delivery service using an HTTP endpoint. We also offer an alternative transport method using SFTP, which is not covered here albeit very similar.

Step 1 : Create a delivery endpoint

A delivery endpoint is a HTTP service that you build and host. It must :

- Accept public connections
- Use HTTPS
- Require basic HTTP authentication (RFC7617).

How to parse the request?

When the report is ready, our system will upload it automatically to the delivery endpoint by issuing a multipart POST request with the file's content as an attachment.

Each post request will enclose one file containing the data from a single provider. If the user connects multiple providers, you'll get multiple separate requests.

Here is an example request :

```
POST /your/endpoint HTTP/1.1
Host: yoursever.yourdomain.com
Authorization: Basic dXNlcm5hbWU6cGFzc3dvcmQ=
cache-control: no-cache
Content-Disposition: form-data; name="pdf"; filename="humanid-sourceid.pdf"
```

HUMAN API

```
------WebKitFormBoundary7MA4YWxkTrZu0gW--

...the file content here
```

We will exclusively issue OPTIONS and POST requests to that endpoint, you can safely reject other HTTP methods.

After processing the request, you should reply with 200 or 201.

Please note that the request's content type may vary depending on the file format of the report. Depending on your configuration, you may get PDF, ZIP and JSON files.

Which file for which user?

You can identify the user based on the file name. We use a flexible naming convention that we can configure for your specific needs.

By default, the attached files follow a naming convention `<humanId>-<sourceId>.pdf`

Where <humanId> is Human API's unique user identifier, and sourceId is a unique source (provider) identifier.

You can safely split the filename using the character "-" as a separator.

Example :

`c0898124e7b12082f200967fe5954bb9-562076d6d8f3ddc64913e947.pdf`

Should match the user with humanId = `c0898124e7b12082f200967fe5954bb9` and the sourceId `562076d6d8f3ddc64913e947.`

The file naming is configurable. A given document can be named using any combination of fields in the table below.

Attribute	Description
Report Name	the report type, in case you want multiple reports to be delivered for a user.
Unique Id	the unique identifier you have assigned to the user
Human Id	Human API's unique identifier
Source Id	A hexadecimal string identifying the data source (healthcare provider)

HUMAN API

Email	the user's email address
First/Last Name	When available

Table 7 : Fields available for naming uploaded files

Step 2 : Encrypt access credentials

Your delivery endpoint should require Basic HTTP authentication with a username and password of your choice. You can supply those credentials to Human API through a secure channel.

We recommend using jass or open ssl for encrypting the credentials. Our public key is available upon request.

Step 3 : Enable the service

The automatic delivery service is disabled by default. Please submit a request to Human API to activate it for your client app. Your request should include :

- The clientId for which you want the feature to be enabled
- The URL of your delivery endpoint
- Encrypted HTTP credentials as a text file.
- Which report(s) you want to be delivered
- Your preferences for naming files.

As soon as the service is enabled, you'll start receiving files for all the subsequent data synchronizations.

HUMAN API

Frequently Asked questions

General questions

How big are the files?

Most files will be smaller than 1MB. However, the file size is commensurate to the amount of data available for the user. You should be able to accept arbitrarily big payloads of up to 10MB.

How long does it take to get the files ?

The documents are compiled AFTER a data sync is complete. The process is asynchronous and may take up to 30mn.

Can I get the medical codes for conditions and prescriptions ?

Yes, the codes are attached to individual data points such as labs, vitals, medications and conditions. You'll find them in the payload when you download a report in JSON format.

I have multiple client apps, can I use this method with all of them ?

Yes, you can do this for all your apps or only some of them.

API access

I'm getting multiple notifications for the same report. What should I do?

Occasionally we run a second normalization pass on a user's data. That happens shortly after the initial retrieval process (5 to 30mn). Reports are refreshed as a side effect of that second pass.

When you get a subsequent notification, we recommend that you download the report again and replace the initial version with the new one.

Do I need to store the API access token?

It is not necessary to store the access token. You may decide to keep it and reuse it until it expires or request a new token every time you need to query the API.

Why do I keep getting an HTTP 415 status code when I try to download a report

HUMAN API

This error is returned when you try to download a report in a format that is not supported. For example, a timeline report doesn't have a PDF representation. Check the [list of standard reports](#) to verify if the report/format pair that you request is supported

Push delivery questions

What if I want to use FTP instead of HTTP?

We support SFTP as a transport layer for automated delivery. The setup procedure is very similar and involves exchanging credentials. Feel free to get in touch with our support team if you want to know more.

Do I get a new document when new data is available for a user?

If you have the continuous sync feature enabled, we generate a new file and push it to you every time we retrieve new data. We also deliver additional files when a user connects an additional provider.

What happens when my delivery endpoint is down?

If the request to your endpoint fails or times out, we will keep retrying for up to 48 hours. A high error rate will trigger an alert on our side and we will notify you of the issue.

Questions? You can send an email to support@humanapi.co for enquiries and support requests. We are happy to help.