

RevolutionEHR

PATIENT DATA API GUIDE

RevolutionEHR v7
API v1.0
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INTRODUCTION

The following document describes the steps a developer must follow to use APIs to access patient Protected Health Information (PHI) held by RevolutionEHR.

The patient health data APIs described in this document are designed to meet the [2015 Edition Final Rule](#) requirements provided by the [Office of the National Coordinator \(ONC\)](#), specifically:

- [§ 170.315\(g\)\(7\) Application Access - Patient Selection](#)
- [§ 170.315\(g\)\(8\) Application Access - Data Category Request](#)
- [§ 170.315\(g\)\(9\) Application Access - All Data Request](#)

REGISTRATION AND CREDENTIALS

To register your application, you must follow a two-step process:

- 1) Register with RevolutionEHR and sign the data access agreement.
- 2) Receive credentials from participating practices.

REGISTERING WITH REVOLUTIONEHR

After a developer registers with RevolutionEHR, we provision a partner account which can be enabled by any practice. To complete registration, an application developer must sign a Data Access Agreement and submit their registration to partner-requests@revolutionehr.com

The **Terms of Use** for this API are covered by the [Data Access Agreement](#).

CREDENTIALS

To receive API credentials, the administrator of a practice must generate the credentials for each application developer. Contact the practice administrator to receive your unique credentials.

Your credentials will consist of:

- username: this is generated by the practice administrator
- password: this is generated by the practice administrator

CONTACT INFORMATION

For assistance and support for this API, please contact the following:

partner-support@revolutionehr.com

GENERAL CONCEPTS

APPLICATION AUTHENTICATION

Authentication of API requests is performed using HTTP Basic Authentication (<https://tools.ietf.org/html/rfc7617>) with a unique username and password combination. Usernames and passwords are generated by the RevolutionEHR practice. See Registration and Credentials above.

The username and password combination are used to generate the 'Basic' HTTP Authorization header per RFC-7617. All requests to the RevolutionEHR API are authenticated through HTTP Basic Authentication. Requests for resources with invalid credentials will result in a HTTP 401 (Unauthorized) response from the server.

APPLICATION USER (PATIENT) AUTHENTICATION

Access to a patient's Protected Health Information (PHI) requires a unique identifier for that patient. This identifier can be accessed with a patient search requiring the patient's last name and a security code. Security codes are generated by the patient using their secure login to the RevolutionEHR patient portal. Once matched and authenticated, the application will receive the unique patient identifier, which will be used for all subsequent API data requests for that patient.

DATA FILTERING AND REQUESTS

Following application and patient authentication, the application will have the ability to request and receive Protected Health Information (PHI). Requests can be made for a complete CCD for a single patient based on the patient token. A filter can also be applied to only return a single section of the CCD document.

The API has the ability to filter the data to either a range of days or a single day, as specified by the API user. To ensure the API is returning clinically relevant data, the effect of date filtering will vary depending on the section of the patient record being returned. For complete CCD documents, the date range is used to filter the list of encounters used to generate a CCD document. For individual sections, any section that depends on data from the most recent encounter within the indicated date range will be affected by the date filter. Any sections that depend on the most current data from the patient record will not be affected by the date filter.

XML RESPONSES

Responses returned by these services follow the C-CDA R2.1 specification for Care Record Summaries.

API ACCESS TECHNICAL REQUIREMENTS

The following requirements must be met to successfully retrieve patient data from these services:

- The service is accessed through an https connection.
- The application can parse the CCD XML data that is returned by the service.
- Login credentials must be passed for each API call.
- A unique patient identifier is required for API requests for Protected Health Information (PHI).
- No special components or app configurations are needed to access the API.

API INTERFACES AND DESCRIPTIONS

APPLICABLE VERSIONS

The interface details described below apply to RevolutionEHR v7.

SERVICE URLS

There are two URLs for use by application developers:

- <https://services.revolutionehr.com/ws/interop/mu/2015/patient/> - Primary production server.
- <https://candidate.revolutionehr.com/ws/interop/mu/2015/patient/> - QA and test server.

To use the QA and test server, please contact RevolutionEHR for credentials.

ENDPOINTS

There are three API endpoints available:

- **search** - allows searching for patients
- **ccds** - generates a document containing elements of the Common Clinical Data Set
- **all** - generates a summary record for the identified patient, formatted in accordance with the standard adopted at §170.205(a)(4) using the CCD document template.

SEARCH

The **search** endpoint is used to search for patients.

REQUEST

Endpoint: search

Action: HTTP POST

HTTP Headers:

Content-Type: application/json

Accepts: application/json

Authorization: [as specified above]

Input Parameters:

JSON-formatted request object, with the following values:

Property	Description	Required
lastName	Patient last name	Yes
accessCode	Access code generated by the patient through RevolutionPHR	Yes

Patient Search Request Example:

```
{
  "lastName": "Smith",
  "accessCode": "a1b2c3"
}
```

RESPONSE

The response will contain a JSON-formatted response array of unique patient identifiers.

Patient Search Response Example:

```
[ "a8a19fb2-1405-4717-b688-4c9c9e7db34a" ]
```

If no matching patients are found, the HTTP response code will be 200 (OK), and the response array will contain no elements.

If matching patients are found, the HTTP response code will be 200 (OK), and the response array will contain one or more elements with a unique patient identifier that can be used in **ccds** and **all** requests.

Errors:

- HTTP response code 401 (Unauthorized): The provided Basic Authentication credentials are not valid

CCDS

The **ccds** endpoint is used for retrieving one or more sections of content from the Common Clinical Data Set. It may be used to retrieve data pertaining to a specific date or range of dates.

REQUEST

Endpoint: ccds

Action: HTTP POST

HTTP Headers:

Content-Type: application/json

Accepts: text/xml

Authorization: [as specified above]

Input Parameters:

JSON-formatted request object, with the following values:

Property	Description	Required
patientIdentifier	Unique patient identifier as returned by the search method	Yes
startDate	Starting date for information to be retrieved. Format: YYYY-MM-DD. Example: "2016-12-31"	No
endDate	Ending date for information to be retrieved. Format: YYYY-MM-DD. Example: "2017-12-31"	No
sections	Array of CCDS sections to include in the retrieved document. Possible sections are: <ul style="list-style-type: none">• Allergies• Assessment and Plan• Encounters<ul style="list-style-type: none">○ Includes care team members• Family History• Functional Status• Goals• Health Concerns• Immunizations• Medical Equipment• Medications• Mental Status• Payers• Problem List• Procedures• Results<ul style="list-style-type: none">○ Includes lab orders	No

Property	Description	Required
	<ul style="list-style-type: none"> • Social History <ul style="list-style-type: none"> ○ Includes birth sex, smoking status • Vital Signs <p>Regardless of section selection above, the following sections are always returned:</p> <ul style="list-style-type: none"> • Patient Name • Date of Birth • Race • Ethnicity • Preferred Language 	

CCDS Request Example:

```

{
  "patientIdentifier": "a8a19fb2-1405-4717-b688-4c9c9e7db34a",
  "startDate": "2015-01-01",
  "endDate": "2017-12-31",
  "sections": [
    "Results",
    "Vital Signs",
    "Mental Status"
  ]
}

```

RESPONSE

If the request is valid, a HTTP 200 (OK) response will be returned with an XML document body containing the requested data. An example XML structure is provided at the end of this document.

Errors:

- HTTP response code 401 (Unauthorized): The provided Basic Authentication credentials are not valid
- HTTP response code 404 (Not Found): The requested patient identifier cannot be found

ALL

The **all** endpoint is used for retrieving all available sections of content from the Common Clinical Data Set. It may be used to retrieve data pertaining to a specific date or range of dates.

REQUEST

Endpoint: all

Action: HTTP POST

HTTP Headers:

Content-Type: application/json

Accepts: text/xml

Authorization: [as specified above]

Input Parameters:

JSON-formatted request object, with the following values:

Property	Description	Required
patientIdentifier	Unique patient identifier as returned by the search method	Yes
startDate	Starting date for information to be retrieved. Format: YYYY-MM-DD. Example: "2016-12-31"	No
endDate	Ending date for information to be retrieved. Format: YYYY-MM-DD. Example: "2017-12-31"	No

All Data Request Example:

```
{
  "patientIdentifier": "a8a19fb2-1405-4717-b688-4c9c9e7db34a",
  "startDate": "2015-01-01",
  "endDate": "2017-12-31"
}
```

RESPONSE

If the request is valid, a HTTP 200 (OK) response will be returned with an XML document body containing the requested data. An example XML response is provided at the end of this document.

Errors:

- HTTP response code 401 (Unauthorized): The provided Basic Authentication credentials are not valid
- HTTP response code 404 (Not Found): The requested patient identifier cannot be found

TERMS OF USE

[Click here to view the Terms of Use for API access.](#)

EXAMPLE XML RESPONSE

```
<?xml version="1.0" encoding="UTF-8"?>
- <ClinicalDocument xsi:schemaLocation="urn:hl7-org:v3 infrastructure/cda/CDA_SDTC.xsd" xmlns:sdtc="urn:hl7-org:sdtc"
  xmlns="urn:hl7-org:v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <realmCode code="US"/>
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId root="2.16.840.1.113883.10.20.22.1.1"/>
  <templateId extension="2015-08-01" root="2.16.840.1.113883.10.20.22.1.1"/>
  <templateId root="2.16.840.1.113883.10.20.22.1.2"/>
  <templateId extension="2015-08-01" root="2.16.840.1.113883.10.20.22.1.2"/>
  <id extension="6645" root="2.25.16912775132143906767.1"/>
  <code code="34133-9" displayName="Summarization of Episode Note" codeSystemName="LOINC"
    codeSystem="2.16.840.1.113883.6.1"/>
  <title>Patient Record</title>
  <effectiveTime value="201811201128-0600"/>
  <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
  <languageCode code="en-US"/>
  - <recordTarget>
    + <patientRole>
    </recordTarget>
  + <author>
  + <custodian>
  + <informationRecipient>
  + <legalAuthenticator>
  + <authenticator>
  - <participant typeCode="IND">
    + <associatedEntity classCode="PRS">
    </participant>
  + <inFulfillmentOf>
  - <documentationOf>
    - <serviceEvent classCode="PCPR">
      + <effectiveTime>
      + <performer typeCode="PRF">
      + <performer typeCode="PRF">
      </serviceEvent>
    </documentationOf>
  - <component>
    - <structuredBody>
      - <component>
        + <section>
        </component>
      </structuredBody>
    </component>
  </ClinicalDocument>
```