

## HIE API Connectivity for Clinical Documents Transactions with the Washington Health Care Authority Clinical Data Repository

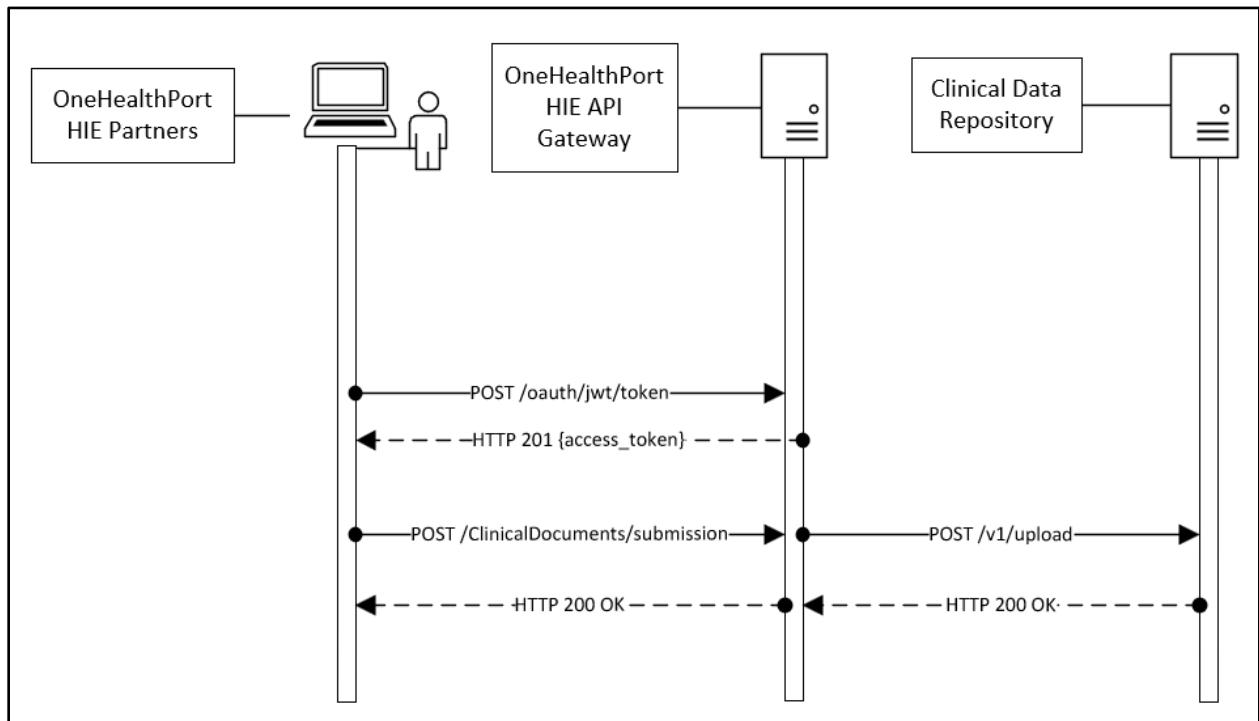
### Purpose

This document presents the OneHealthPort HIE's API connectivity supporting the Washington Health Care Authority Clinical Data Repository (CDR) submission of C-CDA clinical documents from provider organizations. It is intended for use by provider organization technical teams or their vendors responsible for setting up connectivity for this data transaction.

### Connectivity - APIs over HTTPS

The diagram below provides an overview of the API connectivity and data submission flow for clinical documents transactions.

### OneHealthPort HIE Clinical Documents Transaction



## Clinical Documents Data Transaction Description:

1. OneHealthPort HIE onboarding team provides an OAuth 2.0 JWT token to submitting organization. OAuth 2.0 JWT tokens are valid for 6 months.
2. Submitting organization uses the OAuth 2.0 JWT token (to be included in the request header) to call the authorization endpoint and receives an access token upon successful authentication.
3. When the authorization endpoint is called, OneHealthPort HIE API Gateway performs verification of the OAuth 2.0 JWT token at the API Gateway. Upon verification, a unique access token is generated by the API Gateway and is valid for 3600 seconds (1 hour).
4. The partner calls the data submission API with the access token included in the request header.
5. The OneHealthPort HIE partner or their vendor will be required to include a file name or identifier for tracking the clinical documents data transaction through its lifecycle. Please see HTTPS header requirements below.
6. OneHealthPort HIE API Gateway verifies access token and forwards the message to CDR.
7. The OneHealthPort HIE returns a synchronous HTTP response to the submitting system.

## Getting Connected to the OneHealthPort HIE API Gateway

### Step 1 – Request OAuth 2.0 JWT token

OneHealthPort HIE provides OAuth 2.0 JWT token to the partner or their vendor via secure mail.

**Different OAuth 2.0 JWT tokens will be provided for each OneHealthPort technical environment – UAT and Production.**

To request a OAuth 2.0 JWT token, submit a OneHealthPort HIE Support Request [form](#).

- In the section of the form called, *Issue or Question area*, select the option called **HIE connectivity set-up**.
- In the section of the form called, *Detail description of issue or question being reported*, please request an OAuth 2.0 JWT token for clinical documents connectivity set up.

**When the support request is received**, the OneHealthPort HIE team will set up the vendor or partner at the API gateway for authentication and send the OAuth 2.0 JWT token to the vendor or partner via secure mail.

## Step 2 – Set up APIs to retrieve access token and submit clinical documents

### OneHealthPort HIE API Endpoints

OneHealthPort HIE vendor or partner will use the endpoints in the table below to retrieve access tokens and submit clinical documents.

| Endpoint Description   | Endpoint  |
|--|---|
| <b>Authorization API User Acceptance Testing (UAT)</b> – used with OAuth 2.0 JWT to receive access token.                      | <a href="https://uat-v2-onehealthport-api.axwaycloud.com/ohp/oauth/jwt/token">https://uat-v2-onehealthport-api.axwaycloud.com/ohp/oauth/jwt/token</a>                   |
| <b>Clinical Documents API UAT</b> – used with unique access token to post clinical document data submission to the CDR.        | <a href="https://uat-v2-onehealthport-api.axwaycloud.com/webservice/ClinicalDocuments">https://uat-v2-onehealthport-api.axwaycloud.com/webservice/ClinicalDocuments</a> |
| <b>Authorization API Production</b> – used with OAuth 2.0 JWT to receive access token.   | <a href="https://prd-v2-onehealthport-api.axwaycloud.com/ohp/oauth/jwt/token">https://prd-v2-onehealthport-api.axwaycloud.com/ohp/oauth/jwt/token</a>                   |
| <b>Clinical Documents API Production</b> – used with unique access token to post clinical document data submission to the CDR. | <a href="https://prd-v2-onehealthport-api.axwaycloud.com/webservice/ClinicalDocuments">https://prd-v2-onehealthport-api.axwaycloud.com/webservice/ClinicalDocuments</a> |

- OneHealthPort HIE onboarding team sets up partner or their vendor for authentication at the API gateway.
- Partner or their vendor calls the authorization endpoint with the OAuth 2.0 JWT token and upon authorization, retrieves a unique access token.
- Partner or their vendor will use the following HTTPS header along with the unique access token to call the API and post clinical document data submissions to the API gateway. Listed below are the header requirements.

| Clinical Documents |  |
|--------------------|--|
| HTTPS Header       | Definition   |
| x-doc-type         | OneHealthPort HIE document type: <ul style="list-style-type: none"> <li>• CCD</li> </ul>   |
| x-org-facility-id  | OneHealthPort HIE organization identifier provided by the HIE onboarding team.   |
| x-ref-id           | Note – The reference identifier can be a file name or identifier that can be used by partner or vendor to manage message through its life cycle. |

## HTTPS Header Example for Clinical Documents Messages

### Retrieve access token from OneHealthPort API gateway to use in the clinical document message submission

```
POST /ohp/oauth/jwt/token HTTP/1.1
Accept-Encoding: gzip, deflate, br
Content-Type: application/x-www-form-urlencoded
Content-Length: 632
Host: uat-v2-onehealthport-api.axwaycloud.com
Connection: Keep-Alive
User-Agent: Apache-HttpClient/4.5.6 (Java/1.8.0_222)
```

```
grant_type=urn:ietf:params:oauth:grant-type:jwt-
bearer&assertion=eyJhbGciOiJIUzUxMiIsImtpZCI6ImU3NGZyNmMzNjU2ZTRhMGFhM2RmYmQ3OTYzZDE
4MGEzliwidHlwIjoiaSdUIn0.eyJzdWJfb3JnX25hbWUiOiJPSFAGUmVncmVzc2lvbiAmIFRlc3QgQ2xpbmljIDEiL
CJzdWliOiI3dXlhc280MSIsImp0aSI6ImYyNWVhbnRlZmZlMzIyYWFkODRmMjNiZjllMmZmNmU5MTIxMTA1IiwiaXhwaWlj
oxNjY4NjAzNzlwLCJpc3MiOiJodHRwczovL3VhdC1hcGkub25laGVhbHRocG9ydC5jb20vc2VydmljZW9wZXJ
hdGlvbnMvandrvcylsImh0cCI6MTY1MjczMTQzMywibmJmljoxNjUyNzA2MTIwfwQ.AeLSsgN4xt823yAmUwlk
H6SUPisuAcIFN3coHmWANhGxS-or29taEbg3WY0TyjLzbWFXIR3IXIkKwCmbCE5hg6EhAJI-
urPoIP_fNyv9qMUMHZ3_hHtcs47el4ewTyZNCgsna001xvAq2CHuFr3ujw2pXBlcumjyoY4ehHjx0x0
```

### OneHealthPort API Gateway response to retrieval of access token

```
HTTP/1.1 201 Created
Max-Forwards: 20
Via: 1.0 axwc-api-11-v2 ()
Connection: close
X-CorrelationID: Id-b3408562ee7d3edc9a71760d 0
Date: Wed, 18 May 2022 18:53:40 GMT
Request-Context: appId=cid-v1:2fb10c65-a180-4921-8c35-c497fb775c0c
X-Azure-Ref:
0tECFYgAAAAD2O3mXTAjVQrifN9mTvwAzQVRMMzMxMDAwMTEwMDM3ADixYTBhMzlxLTc5ZmEtNDQ3
OS1iYTEyLWY1ZGFIZTVjMjx0x0
X-Cache: CONFIG_NOCACHE
X-Powered-By: ASP.NET
Content-Type: application/json
```

This is an example of an access token that will be used in the Authorization HTTP header of the clinical document message POST.

```
{
  "access_token": "d2932b2e1eb740c19885e35ff42e80c692251194b35b4e7895f0a36630c71cc6",
  "token_type": "Bearer",
  "expires_in": "3600"
}
```

**HTTP status code for access token retrieval:** If you do not use a valid OAuth 2.0 JWT token to retrieve the access token you will receive a **401 Unauthorized** response. Please follow the instructions below to receive a valid OAuth 2.0 JWT token from the OneHealthPort HIE.

- Submit a OneHealthPort HIE Support Request [form](#).
- In the section of the form called, *Issue or Question area*, select the option called **HIE connectivity set-up**.
- In the section of the form called, *Detail description of issue or question being reported*, please request a new OAuth 2.0 JWT token for clinical documents connectivity set up.

**When the support request is received**, the OneHealthPort HIE team will send the new OAuth 2.0 JWT token to the vendor or partner via secure mail.

### POST submission of a clinical document message

POST /webservice/ClinicalDocuments HTTP/1.1

**Authorization:** Bearer b84d5e02c1604a98ba173030153918bb2d807a43e9434a5f9ef50d8df2cbxoxo

**x-ref-id:** ac53cc6b-7ddd-47cc-a341-6ef7ec80xoxo

**x-doc-type:** CCD

**x-org-facility-id:** 7uycso22

**Content-Type:** application/xml

Content-Length: 2043

**Host:** uat-v2-onehealthport-api.axwaycloud.com

Connection: Keep-Alive

User-Agent: Apache-HttpClient/4.5.6 (Java/1.8.0\_222)

Accept-Encoding: gzip,deflate

The HTTP headers highlighted in blue in the example are required for the Clinical Document message POST.

**Note, in Content-Type indicate application/xml and in the x-doc-type indicate CCD.**

```
<ClinicalDocument xmlns="urn:hl7-org:v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"><realmCode code="US" /><typeId root="2.16.840.1.113883.1.3"
extension="POCD_HD000040" /><templateId root="2.16.840.1.113883.10.20.22.1.1" /><templateId
root="2.16.840.1.113883.10.20.22.1.2" /><id root="9a01933e-ff94-4088-a124-c4240d35eaa5" /><code
code="34133-9" displayName="API2: PDQ-no-match" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" /><title>API2: PDQ-no-match</title><effectiveTime
value="202306261110-0700" /><confidentialityCode code="N" displayName="Normal"
codeSystem="2.16.840.1.113883.5.25" codeSystemName="Confidentiality Code" /><languageCode
code="en-US" /><recordTarget><patientRole><!-- OHP Organization Test OID --><id
root="1.3.6.1.4.1.38630.2.1.1.117" extension="XXX" /><addr use="HP"><streetAddressLine>37476
Upton Springs</streetAddressLine><city>Port
Margy</city><state>AZ</state><postalCode>85001</postalCode><country>US</country></addr><tel
ecom use="HP" value="tel:(536) 314-1072 x9144" /><patient><name
use="L"><given>Test</given><family>Test</family></name><administrativeGenderCode code="M"
displayName="male" codeSystem="2.16.840.1.113883.5.1"
codeSystemName="AdministrativeGender" /><birthTime value="19000101" /><maritalStatusCode
code="M" displayName="Married" codeSystem="2.16.840.1.113883.5.2"
codeSystemName="MaritalStatusCode" /><religiousAffiliationCode code="1013"
```

```

displayName="Christian (non-Catholic, non-specific)" codeSystem="2.16.840.1.113883.5.1076"
codeSystemName="HL7 Religious Affiliation" /><raceCode code="2028-9" displayName="Asian"
codeSystem="2.16.840.1.113883.6.238" codeSystemName="Race and Ethnicity - CDC"
/><ethnicGroupCode code="2186-5" displayName="Not Hispanic or Latino"
codeSystem="2.16.840.1.113883.6.238" codeSystemName="Race and Ethnicity - CDC"
/><languageCommunication><languageCode code="en-US"
/></languageCommunication></patient></recordTarget><author><time
value="20230626111047" /><assignedAuthor><id root="2.16.840.1.113883.4.6"
extension="1683804202" /><addr use="WP"><streetAddressLine>3393 Renner
Prairie</streetAddressLine><city>North
Margeretview</city><state>KS</state><postalCode>66601</postalCode><country>US</country></ad
dr><telecom use="WP" value="tel:271-225-3261 x0383"
/><assignedPerson><name><given>Test</given><family>Test</family><suffix>M.D.</suffix></name>
</assignedPerson></assignedAuthor></author><custodian><assignedCustodian><representedCustodi
anOrganization><id root="6b252afb-8efe-4870-9e94-7b38ec64aa07" /><name>OHP Regression Test
Clinic</name><telecom use="WP" value="tel:564.537.6010 x32746" /><addr
use="WP"><streetAddressLine>797 Test </streetAddressLine><city>Test
</city><state>WA</state><postalCode>99999</postalCode><country>US</country></addr></represe
ntedCustodianOrganization></assignedCustodian></custodian><documentationOf><serviceEvent
classCode="PCPR"><effectiveTime><low value="20230626111047" /><high value="20230626111047"
/></effectiveTime></serviceEvent></documentationOf><component><structuredBody><component>
<section><templateId root="2.16.840.1.113883.10.20.22.2.5.1" /><code code="11450-4"
displayName="Problem List" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
/><title>Problems</title><text><table border="1"
width="100%"><thead><tr><th>Problem</th><th>Date</th></tr></thead><tbody><tr><td>API2:
PDQ-no-match: Test Problem</td><td>June 26th,
2023</td></tr></tbody></table></text><entry><act classCode="ACT"
moodCode="EVN"><templateId root="2.16.840.1.113883.10.20.22.4.3" /><id root="6b2dc198-3806-
45b3-b77c-dc4aef8eabec" /><code code="CONC" displayName="Concern"
codeSystem="2.16.840.1.113883.5.6" codeSystemName="ActClass" /><statusCode code="active"
/><effectiveTime><low value="20230626" /></effectiveTime><entryRelationship
typeCode="SUBJ"><observation classCode="OBS" moodCode="EVN"><templateId
root="2.16.840.1.113883.10.20.22.4.4" /><id root="1e30825e-6d9f-4ce9-adce-9eb1e54b9bc2"
/><code code="55607006" displayName="Problem" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMEDCT" /><statusCode code="completed" /><effectiveTime><low
value="202306261110-0700" /></effectiveTime><value xsi:type="CD" displayName="API2: PDQ-no-
match: Test Problem"
/></observation></entryRelationship></act></entry></section></component></structuredBody></co
mponent></ClinicalDocument>

```

**HTTP status code for access token expiration:** If you do not use the retrieved access token in the clinical document submission before it expires (access tokens expire in 3600 seconds), you will receive a **401 Unauthorized** response. You will then need to repeat the process to retrieve a new access token and resubmit the NBS message.

### Step 3 – Receiving synchronous responses

Responses are returned *synchronously, meaning they are returned in the same connectivity thread opened during the submission.*

**HTTP Status Codes:** Responses are returned for each Clinical Document submission.

**HTTP Statuses:**

- 200 OK (submission received by CDR)
- 201 Created (access token retrieved successfully)
- 403 Forbidden (user or OAuth2 jwt token has not been permitted by OneHealthPort HIE to submit a Clinical Document message)
- 500 Internal Server (resubmit the failed message)
- 503 Service Unavailable (resubmit the failed message)
- 504 Timeout (resubmit the failed message)
- 514 Server Error (unknown patient)
- 515 Server Error (unknown source organization)

### Synchronous 200 accepted response from CDR that Clinical Document message was accepted

```
HTTP/1.1 200 OK
Max-Forwards: 20
Via: 1.0 axwc-api-11-v2 ()
Connection: close
X-CorrelationID: Id-0ad5996464e09dda4e9e98bb 0
Date: Mon, 26 Jun 2023 18:12:53 GMT
Request-Context: appId=cid-v1:b3be8b11-080a-45c0-ac14-22974d73c03f
Set-Cookie:
*****
*****
Set-Cookie:
*****
*****
x-doc-type: CCD
x-org-facility-id: 7uycso22
x-ref-id: b0890c54-ed59-4b0a-8442-32fa8a002752
X-TRACKEDOBJECT-IDENTITY: 1
X-TRACKEDOBJECT-NAME: API_Sentinel
X-TRACKING-CYCLEID: Id-0ad5996464e09dda4e9e98bb
```

Content-Type: application/xml

```
<RegistryResponse>
  <RegistryResult>
    <Message>Success</Message>
  </RegistryResult>
</RegistryResponse>
```

## HTTP Responses

HTTP response codes shown below are sent back by the OneHealthPort HIE API gateway.

| HTTP Response Code | Definition   |
|--------------------|--|
| 200                | OK   |
| 201                | Created - OneHealthPort HIE API Gateway successful response for retrieval of access token.   |
| 401                | <p>Unauthorized</p> <p><b>Action:</b> Verify that the correct OAuth 2.0 JWT token is being used correctly to obtain access token. If not, submit a OneHealthPort HIE Support Request <a href="#">form</a> to request a new OAuth 2.0 JWT token.</p> <p>If the 401 is related to the access token in the Clinical Documents submission, the access token may be expired or compromised. Please retrieve a new access token and resubmit.</p>  |
| 403                | <p>Forbidden</p> <p>The OAuth 2.0 JWT token is not configured for the document type included in the submission.</p> <p><b>Action for vendor or partner when receiving a 403 response:</b></p> <p>Submit a OneHealthPort HIE Support Request <a href="#">form</a>.</p> <p>In the section of the form called, <i>Issue or Question area</i>, select the option called <b>HIE connectivity set-up</b>.</p> <p>In the section of the form called, <i>Detail description of issue or question being reported</i>, please indicate you have received a 403 forbidden error and provide the content of the error message.</p> |
| 500                | <p>Internal Server Error</p> <p><b>Action:</b> Resubmit messages that receive this response.</p>   |
| 503                | Service Unavailable. This response is sent from the OneHealthPort HIE gateway when the OneHealthPort CDR is offline for maintenance.   |



|     |   |
|-----|---|
|     | <b>Action: The submitter needs to hold submissions until notified systems are online and operational.</b>   |
| 504 | Timeout generated by the CDR if processing is delayed.<br><br><b>Action:</b> Resubmit messages that receive this response.                              |
| 514 | Unknown Patient Id specified in request.<br><br><b>Action:</b> Confirm patient meets criteria for CDR submission and resubmit the message if necessary. |
| 515 | Unknown Source Id provided in the request.<br><br><b>Action:</b> Confirm organization identifiers are correct and resubmit the message.                 |

## Revocation of OAuth 2.0 JWT Token

If a OneHealthPort HIE partner's OAuth 2.0 JWT token becomes compromised, **immediately notify** the OneHealthPort HIE so the token can be revoked (rendered invalid) and a new one can be issued. Follow the process below for notification and to obtain a new OAuth 2.0 JWT token.

### Notification Process for Compromised and Request for New OAuth 2.0 JWT Token

- Submit a OneHealthPort HIE Support Request [form](#).
- In the section of the form called, *Issue or Question area*, select the option called **HIE connectivity set-up**.
- In the section of the form called, *Detail description of issue or question being reported*, please indicate your OAuth 2.0 JWT token has been compromised and you would like the OneHealthPort team to provide a new OAuth 2.0 JWT token for Clinical Documents data submission.

## Operations

The API connectivity at the OneHealthPort HIE API gateway will involve the following for operational consideration and management.

- OneHealthPort HIE systems are online and operational for Clinical Documents data submissions unless the CDR is down for scheduled maintenance or systems are down for emergency maintenance.
- Partners will be responsible for reprocessing any messages that do not receive an acknowledgement or successful HTTP response code 200.
- Maintenance schedules are posted on the OneHealthPort HIE [web page](#) under Maintenance Schedule.