HIE API Connectivity for Cancer Event Reporting Submissions to the Washington Department of Health

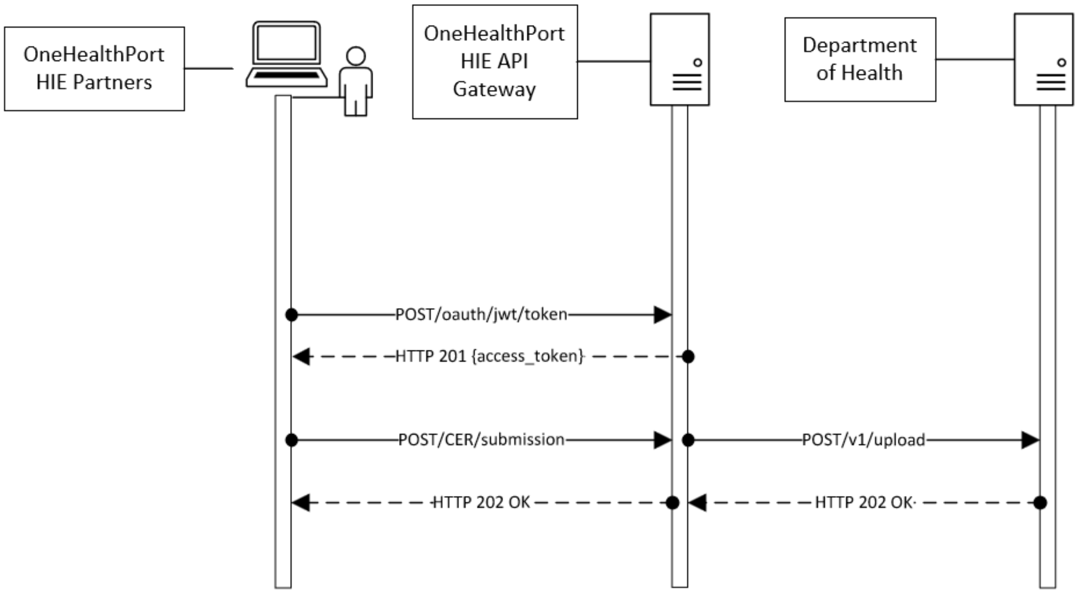
Purpose

This document presents the OneHealthPort HIE's API connectivity that supports the Cancer Event Reporting (CER) data submissions to the Washington Department of Health (DOH). It is intended for use by provider organization technical teams or their vendors responsible for setting up connectivity for these data submissions.

Connectivity - APIs over HTTPS

The diagram below provides an overview of the API connectivity and data submission flow for CER data submissions.

OneHealthPort HIE CER Data Submissions



CER Data Submission 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 a CER data submission through its lifecycle. Please see HTTPS header requirements below.
6. OneHealthPort HIE API Gateway verifies access token and forwards the message to DOH.
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 CER 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 CER data

OneHealthPort HIE API Endpoints

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

Endpoint Description	Endpoint
Authorization API User Acceptance Testing (UAT) – used with OAuth 2.0 JWT to receive access token.	https://uat-v2-onehealthport-api.axwaycloud.com/ohp/oauth/jwt/token
CER API UAT – used with unique access token to post CER message for data submission to DOH.	https://uat-v2-onehealthport-api.axwaycloud.com/doh/phchub/PHC-Hub/cer
Authorization API Production – used with Oauth 2.0 JWT to receive access token.	https://prd-v2-onehealthport-api.axwaycloud.com/ohp/oauth/jwt/token
CER API Production – used with unique access token to post CER message for data submission to DOH.	https://prd-v2-onehealthport-api.axwaycloud.com/doh/phchub/PHC-Hub/cer

- 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 CER data submissions to the API gateway. Listed below are the header requirements.

HTTPS Header for CER	Definition
x-doc-type	OneHealthPort HIE document type: • CER
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. **The file name or identifier used is limited to 61 characters.**

HTTPS Header Example for CER Messages

Retrieve access token from OneHealthPort API gateway to use in the CER 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=eyJhbGciOiJFUzUxMiIsImtpZCI6ImU3NGYzNmMzNjU2ZTRhMGFhM2RmYmQ3OTYzZDE
4MGEzIiwidHlwIjoiSldUIn0.eyJzdWJfb3JnX25hbWUiOiJPSFAgUmVncmVzc2lvbiAmIFRlc3QgQ2xpbmljIDEiL
CJzdWIiOiI3dXljc280MSIsImp0aSI6ImYyNWRlMzI2YWFkODRmMjNiZjllMWZmNmU5MTIxMTA1IiwiZXhwIj
oxNjY4NjAzNzIwLCJpc3MiOiJodHRwczovL3VhdC1hcGkub25laGVhbHRocG9ydC5jb20vc2VydmljZW9wZXJ
hdGlvbnMvandrcyIsImlhdCI6MTY1MjczMTQzMywibmJmIjoxNjUyNzA2MTIwfQ.AeLSsgN4xt823yAmUwlk
H6SUPisuAcIFN3coHmWANhGxS-oR29taEbg3WY0TyjLzbWFXlR3lXlkKwcMbCE5hg6EhAJl-
urPoIP_fNyv9qMUMHZ3_hHtcs47el4ewTyzNCgsna0O1xvAq2CHuFr3ujw2pXBIcumjyoY4ehHjx0x0
```

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:
0tECFYgAAAAD2O3mXTAjVQrifN9mTvwAzQVRMMzMxMDAwMTEwMDM3ADIxYTBhMzIxLTc5ZmEtNDQ3
OS1iYTExLWY1ZGFiZTVjMjx0x0
X-Cache: CONFIG_NOCACHE
X-Powered-By: ASP.NET
Content-Type: application/json


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

This is an example of an access token that will be used in the Authorization HTTP header of the CER message

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 CER 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 an CER message

```
POST /doh/phchub/PHC-Hub/cer HTTP/1.1
Authorization: Bearer b84d5e02c1604a98ba173030153918bb2d807a43e9434a5f9ef50d8df2cbxoxo
x-ref-id: ac53cc6b-7ddd-47cc-a341-6ef7ec80xoxo
x-doc-type: CER
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 CER message POST.

Note, in Content-Type indicate application/xml

```
<?xml version="1.0" encoding="windows-1252" ?>
<ClinicalDocument xmlns="urn:hl7-org:v3">
   <realmCode code="US"/>
   <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
   <templateId root="1.2.840.114350.1.72.1.51693"/>
   <templateId root="2.16.840.1.113883.10" extension="IMPL_CDAR2_LEVEL1"/>
   <templateId root="2.16.840.1.113883.10.20.22.1.1" extension="2014-06-09"/>
   <templateId root="2.16.840.1.113883.10.13.1" extension="2015-01-29"/>
   <id assigningAuthorityName="EPC" extension="1.2.840.114350.1.13.296.2.7.8.688883.1629001499"
root="1.2.840.114350.1.13.296.2.7.1.1"/>
   <code code="72134-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Physician Reporting to a Public Health Repository - Cancer Registry"/>
   <title>Physician Reporting to a Public Health Repository - Cancer Registry</title>
   <effectiveTime value="20230705102041-0700"/>
   <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25" displayName="Normal"/>
   <languageCode code="en-US"/>
   <setId assigningAuthorityName="EPC" extension="4490a23e-1b58-11ee-a23d-7801e961effb"
root="1.2.840.114350.1.13.296.2.7.1.1"/>
   <versionNumber value="1"/>
</ClinicalDocument>
```

HTTP status code for access token expiration: If you do not use the retrieved access token in the CER 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 CER 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 CER submission.

HTTP Statuses:

- 201 Created (access token retrieved successfully)
- 202 Accepted (submission has been accepted by DOH)
- 400 Bad Request (submission rejected for conformance reasons)
- 403 Forbidden (user has not been permitted by OneHealthPort HIE to submit a CER message)
    - Action item for vendor or partner when receiving a 403 response:
        - 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 you have received a 403 forbidden error and provide the content of the error message.
- 500 Internal Server (resubmit the failed message)
- 503 Service Unavailable (resubmit the failed message when DOH systems available)
- 504 Timeout (resubmit the failed message)

Synchronous 202 accepted response from DOH system that CER file was accepted

```
HTTP/1.1 202 Accepted
Max-Forwards: 20
Via: 1.0 axwc-api-11-v2 ()
Connection: close
X-CorrelationID: Id-3e3d8562bb7cec010ea56496 0
Date: Wed, 18 May 2022 18:38:54 GMT
Request-Context: appId=
x-doc-type: CER
x-org-facility-id: 7uycso22
x-ref-id: ac53cc6b-7ddd-47cc-a341-6ef7ec80xoxo
X-TRACKEDOBJECT-IDENTITY: 1
X-TRACKEDOBJECT-NAME: API_Sentinel
X-TRACKING-CYCLEID: Id-3e3d8562bb7cec010ea56496
Content-Type: text/plain; charset=utf-8

Submitted item has been received.  x-ref-id: ac53cc6b-7ddd-47cc-a341-6ef7ec80xoxo
```

HTTP Responses

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

HTTP Response Code	Definition
201	Created - OneHealthPort HIE API Gateway successful response for retrieval of access token.
202	Accepted - DOH successful message submission response passed back by the API gateway.
400	Bad Request **Action:** Review response for additional detail for conformance errors. Make corrections and resubmit.
401	Unauthorized **Action:** 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 form to request a new OAuth 2.0 JWT token. If the 401 is related to the access token in the CER submission, the access token may be expired or compromised. Please retrieve a new access token and resubmit.

403	Forbidden The OAuth 2.0 JWT token is not configured for the document type included in the submission. **Action for vendor or partner when receiving a 403 response:** 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 you have received a 403 forbidden error and provide the content of the error message.
415	Unsupported media type **Action for vendor or partner when receiving a 415 response:** The 415 error could occur for the following reasons: • The payload format is not in a supported format. • The content-type is incorrect. • The content encoding is incorrect.
500	Internal Server Error **Action:** Resubmit messages that receive this response.
503	Service Unavailable. This response is sent from the OneHealthPort HIE gateway when the OneHealthPort or DOH systems are taken offline for maintenance. **Action: The submitter needs to hold submissions until notified systems are online and operational.**
504	Timeout generated by the DOH system if processing is delayed. **Action:** Resubmit messages that received this response.

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 CER 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 CER data submissions unless DOH takes down their systems 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 202.
- Maintenance schedules are posted on the OneHealthPort HIE web page under Maintenance Schedule.