

EchoVantage FHIR API Documentation

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Schema

- All API access is over HTTPS.
- All data is sent and received as JSON or XML.
- Blank fields are omitted.
- All timestamps are returned in FHIR® standard date/DateTime formats.

Media Types

The Echo Group supports the R4 FHIR standard-defined media type for JSON content: application/fhir+json

Base URLs

Apps registered with the Echo Group are granted OAuth 2.0 client credentials per the ECHO API terms of use. These credentials are environment specific and valid for that environment only. In the Base URLs below, {agencylookup} is replaced with the specific environment lookup key.

Auth requests use

```
https://{agencylookup}.echoehr.com/auth
```

FHIR API requests use

```
https://{agencylookup}.echoehr.com/fhir/r4
```

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Resource

The FHIR standard resource to access. Example: AllergyIntolerance

Resource Identity

Please note that no IDs or Identifiers in The Echo Group FHIR server are intended to be used outside of the context of their complete URL. A complete URL consists of the service root url, the resource, and the parameters (if any).

Error Codes

The FHIR server will return [standard HTTP Error codes](#), here are some you might encounter:

A 400 Bad Request response can be received for a variety of reasons such as making a request with an invalid query parameter. For example, searching the AllergyIntolerance resource with the “invalidparam” query param:

```
GET baseURL/fhir/r4/AllergyIntolerance?invalidparam=active
```

-> Status 400 Bad Request

A 404 Not Found response can be received when making a request with an invalid or unsupported resource type or if a specific FHIR resource is not found for a certain ID. For example, if you request the “NotAResource” type that does not exist:

```
GET baseURL/NotAResource
```

Status 404 Not Found

A 403 Forbidden response is received when making a request the client does not have permission to make. For example, if your token only allows access to a single Patient's resources but you request all Patient resources:

```
GET baseURL/Patient
```

Status 403 Forbidden

OperationOutcome

For most errors, we will include a response body in the form of an OperationOutcome FHIR resource. You will find more information about the error within the resource in the [issue.details](#).

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```
{

  "resourceType": "OperationOutcome",

  "issue": [

    {

      "severity": "error",

      "code": "not-supported",

      "diagnostics": "Invalid request: The FHIR endpoint on this server does not know how to handle GET operation[AllergyIntolerance] with parameters [[invalidparam]]"

    }

  ]

}
```

Validation

When making create or update requests to the FHIR server the payloads will be validated according to the FHIR Release 4 specifications (<https://www.hl7.org/fhir/>). Any get or search requests will also return payloads that conform to the FHIR specifications.

Authentication

Open Requesting Access Using the Authorization Code Flow Method configuration options

Echo's FHIR API supports three Authorization Code Flow methods with the Proof Key for Code Exchange or PKCE industry standard that can help mitigate known security threats. In addition, two Client Credential flows are also supported. Each type of authorization is detailed in the sections below.

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Requesting Access Using the Authorization Code Flow Method

All methods start with obtaining the authorization code.

POST/GET `https://someagency.com/auth/oauth2/authorize`

`response_type` - must be code

`client_id` - Client ID for the application as registered in EchoVantage

`scope` - space delineated list of scopes

`redirect_uri` - Must match a redirect URL registered for the application in EchoVantage

`aud` - `https://someagency.com/fhir/r4` (the FHIR resource server)

`state` - A random value associated with the request used to track and verify the request in the initial stages of authorization

`code_challenge` - PKCE compliant code challenge value (<https://www.oauth.com/oauth2-servers/pkce/authorization-request/>)

`code_challenge_method` - must be S256. PKCE also allows a plain method, but SMART launch for FHIR apps requires S256

After submitting the above request successfully, the user may be requested to perform additional steps such as logging in and providing consent for the scopes requested by the app. Once the user is authenticated and authorized, a request will be sent to the `redirect_uri` indicated in the authorization request that provides an authorization code and the state value used in the authorization request. From here the app can retrieve the access token using any of the three following methods:

Symmetric

Use Basic Authorization of Base 64 encoded `<client_id>:<client_secret>`

POST `https://{testagency}.com/auth/oauth2/token`

`code` - The authorization code received at the redirect URI

`grant_type` - must be `authorization_code`

`redirect_uri` - must be the same as the redirect URI that was provided to obtain the authorization code

`code_verifier` - PKCE compliant code verifier value that corresponds to the code challenge value provided when obtaining the authorization code

Asymmetric

The client application must have registered a JWKS URL in EchoVantage in order to use this method. There is NO Authorization header.

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POST https://{testagency}.com/auth/oauth2/token

code - The authorization code received at the redirect URI

grant_type - must be authorization_code

redirect_uri - must be the same as the redirect URI that was provided to obtain the authorization code

client_assertion - A client assertion of the same format as specified in the Private Key JWT authentication

client_assertion_type - Must be urn:ietf:params:oauth:client-assertion-type:jwt-bearer

code_verifier - PKCE compliant code verifier value that corresponds to the code challenge value provided when obtaining the authorization code

Public Client

The client must be registered as a Public Client in EchoVantage which implies trusting the application enough to not validate the application's request using the other methods. There is NO authorization header.

POST https://{testagency}.com/auth/oauth2/token

client_id - the registered client_id of the client application

code - The authorization code received at the redirect URI

grant_type - must be authorization_code

redirect_uri - must be the same as the redirect URI that was provided to obtain the authorization code

code_verifier - PKCE compliant code verifier value that corresponds to the code challenge value provided when obtaining the authorization code

Sample Response

These three authorization methods all result in a response similar to the example below.

```
{
  "need_patient_banner": false, // only provided for EHR launches
  "smart_style_url": "https://someagency.com/smart-style.json", // only provided for EHR Launches
  "patient": "87a339d0-8cae-418e-89c7-8651e6aab3c6", // only provided if a patient launch context was established
  "token_type": "Bearer",
  "scope": "<the scopes authorized when obtaining the authorization code>",
  "expires_in": 3599,
  "access_token":
```

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```
"eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJjb250ZXh0Ijpb7Im5lZWVudF9iYW5uZXliOnRydWUlnNtYXJ0X3N0eWxlX3VybCI6Imh0dHBzOi8vc21hcnQuYXJnby5ydW4vLn3NtYXJ0LXN0eWxlLmpzb24iLCJwYXRpZW50IjoiODdhMzM5ZDA0GnZhZS00MThlTg5YzctODY1MWU2YWFiM2M2In0sImNsaVVudF9pZCI6ImRlbW9fYXBwX3doYXRldmVylwiw2NvcGUiOiJsYXV2gvcGF0aWVudCBwYXRpZW50L09ic2VydMFOaW9uLnJzIHhhdGllbnQvUGFOaWVudC5ycyBvZmZsaW5lX2FjY2VzcyIsImhhdCI6MTYzMzUzMzg1OSwiZXhwIjoxNjY1MDY5ODU5fQ.Q41QwZCEQIZ16M7YwvYuVbUP03mRFJoqRxl8SS8_ImM"}
"refresh_token":
"eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJjb250ZXh0Ijpb7Im5lZWVudF9iYW5uZXliOnRydWUlnNtYXJ0X3N0eWxlX3VybCI6Imh0dHBzOi8vc21hcnQuYXJnby5ydW4vLn3NtYXJ0LXN0eWxlLmpzb24iLCJwYXRpZW50IjoiODdhMzM5ZDA0GNhZS00MThlTg5YzctODY1MWU2YWFiM2M2In0sImNsaVVudF9pZCI6ImRlbW9fYXBwX3doYXRldmVylwiw2NvcGUiOiJsYXV2gvcGF0aWVudCBwYXRpZW50L09ic2VydMFOaW9uLnJzIHhhdGllbnQvUGFOaWVudC5ycyBvZmZsaW5lX2FjY2VzcyIsImhhdCI6MTYzMzUzMzg1OSwiZXhwIjoxNjY1MDY5ODU5fQ.Q41QwZCEQIZ16M7YwvYuVbUP03mRFJoqRxl8SS8_ImM"}
}
```

Refreshing the Access Token

Use the access token from the response (shown above) when retrieving resources from the FHIR server by using an Authorization header of `Bearer <access\_token>` in the requests. The access token expires after a certain amount of time, the <expires_in> field indicates the lifespan of the token, but the refresh_token can be used to receive a new access_token with a refreshed lifespan.

To obtain a new access_token make another request to the token endpoint.

- **Symmetric** - Use Basic Authorization of Base 64 encoded <client_id>:<client_secret>

POST https://{testagency}.com/auth/oauth2/token

grant_type - Must be refresh_token

refresh_token - The refresh token from the last token response

- **Asymmetric** - Requires registered JWKS URL; there is NO Authorization header.

POST https://{testagency}.com/auth/oauth2/token

grant_type - Must be refresh_token

refresh_token - The refresh token from the last token response

client_assertion_type - must be urn:ietf:params:oauth:client-assertion-type:jwt-bearer

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client_assertion - should be the same as the initial token request

- **Public** - Must be registered as a public client; there is NO Authorization header.

POST https://{testagency}.com/auth/oauth2/token

client_id - The registered app's client ID

grant_type - Must be refresh_token

refresh_token - The refresh token from the last token response

The response will have the same format as the initial token request, and the new refresh token can be used in the same way to continue refreshing the access_token.

Requesting Access Using the Client Credential Grant Flow Method

Private Key JWT

The external app must be registered in EV with a JWKS url. The public keys provided by the url allow us to verify that the jwt assertion was created by the third-party app.

Note: The jwks url is provided and controlled by the third party. It is not Echo's jwks url.

Inputs:

- client_assertion(example)
 - A JWT signed with the external apps private key
 - Header:

```
{
  "typ": "JWT",
  "alg": "ES384",
  "kid": "4b49a739d1eb115b3225f4cf9beb6d1b"
}
```

- Body:

```
{
  "iss": "client_id", -- client_id of the external app
  "sub": "client_id", -- client_id of the external app
}
```

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- "aud": "https://testAgency.com/auth/oauth2/token", -- echo's auth server
- "exp": 1667421076, -- expiration in unix epoch
- "jti": "ede3d8a3ad32fb019b7a8af675a314b2753a5fbe24088e3dfd0372557e1bb50f"
- }

- client_assertion_type

- Must be urn:ietf:params:oauth:client-assertion-type:jwt-bearer

- grant_type

- Must be `client_credentials`

- scope

- Any requested scope that is a subset of the ones configured in EV.

Example request:

```
curl -v -X POST testAgency.com/auth/oauth2/token?\
client_assertion={yourJWT}&\
client_assertion_type=urn%3Aietf%3Aparams%3Aoauth%3Aclient-assertion-type%3Ajwt-bearer&\
grant_type=client_credentials&\
scope=system%2FBulkExport.crd
```

Additional information and examples can be found here: [HL7.FHIR.UV.SMART-APP-LAUNCH\Backend Services - FHIR v4.0.1](#)

Basic Authorization

Users can request the OAuth2 access token by sending a POST token request to the authorization server.

POST https://testAgency.echoehr.com/auth/oauth2/token?grant_type=client_credentials

- with Authorization Basic request header

eg. Authorization: Basic <credential>

- where <credentials> is the value <client-id>:<client-secret> base 64 encoded.

For example, if we are using the following `client-id` and `client-secret`,

client-id = testAgency.echoehr.com_Thi98zVSZZB8q5k

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```
client-secret = fhir-testing
```

The credential value is

```
testAgency.echoehr.com_Thi98zVSZZB8q5k:fhir-testing
```

Online base64 encoder (eg. base64encode.org) can be used to encode this credential. The encoded value of the credential above is

```
cHJvZC5xYS5ldi5lY2hvbWVudGFuLmV2FsX2ZoaXItZGVzdGluZzpmGlyLXRlc3Rpbmc=
```

Add the following header in the access token POST request (see Postman example below):

```
Authorization: Basic cHJvZC5xYS5ldi5lY2hvbWVudGFuLmV2FsX2ZoaXItZGVzdGluZzpmGlyLXRlc3Rpbmc=
```

The authorization server will return an **access-token** if the request is successful.

```
{
  "access_token": "eyJraWQlOiJnQLAo6v_BpYv04wm8ysJ_2S8ltUBcXHvbf-r95M-yY69QKrdd0DJUs75UrGskTUD7AwL2gfBeCZUEc1R5p-Flq3yQ",
  "scope": "system/Patient.crs system/MedicationAdministration.cru system/Practitioner.rs",
  "token_type": "Bearer",
  "expires_in": 300
}
```

Note that the token returns an expires_in value with the default access-token expiration time of 5 minutes (300 seconds). A properly configured FHIR Client should already be handling a token refresh automatically. However, when the access token is requested manually (using Postman, for example), users must keep in mind that the access token expires after 5 minutes, and a new access token will need to be requested.

Accessing the FHIR Resource Using the Token

Use the access token generated above to access the FHIR resource. For example, send the following GET request to the FHIR resource server to search Patient resources.

- GET <https://testagency.echoehr.com/fhir/r4/Patient/>

This GET request must include an Authorization Bearer request header in the following format:

- Authorization: Bearer <access-token>

Replace <access-token> with the value returned for the access token by the authorization server in the steps above. The FHIR resource server will return the requested Patient resource if the request is successful.

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Supported Actions

- Create - POST
- Read - GET (by ID)
- Update - PUT
- Search - GET (All filtered by query parameters)

Example

Search example using Postman

- First, send a POST request to the Authorization Server for an access token following the steps in the Basic Authorization section above.
- Then use the access token in the GET request, shown below

The screenshot shows a Postman interface for a GET request to `https://qamilestone1.echoehr.com/fhir/r4/Patient`. The request is configured with an Authorization header containing a Bearer token. The response is displayed in the Body tab, showing a JSON searchset with one Patient resource.

```
1 {
2   "resourceType": "Bundle",
3   "id": "8b97e88f-3dc8-40e1-bf14-8b9cfe8cbbba",
4   "meta": {
5     "lastUpdated": "2022-11-14T18:31:36.714+00:00"
6   },
7   "type": "searchset",
8   "total": 50,
9   "link": [
10    {
11      "relation": "self",
12      "url": "https://qamilestone1.echoehr.com/fhir/r4/Patient"
13    }
14  ],
15  "entry": [
16    {
17      "fullUrl": "https://qamilestone1.echoehr.com/fhir/r4/Patient/202207270241157620968F580B50F4E44924",
18      "resource": {
19        "resourceType": "Patient",
20        "id": "202207270241157620968F580B50F4E44924",
21        "extension": [
22          {
23            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race",
```

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RESOURCES:

AllergyIntolerance

Open AllergyIntolerance configuration options

AllergyIntolerance

Open configuration options

The AllergyIntolerance resource fetches the allergies and adverse reactions associated with a patient. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- patient
- clinicalStatus

API Request Examples:

- Fetch the allergy intolerances associated with a single patient.

```
GET https://testagency.echoehr.com/fhir/r4/AllergyIntolerance?patient={Patient Id}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/AllergyIntolerance?patient=20210507052150504189B33B3620B48B4B83
```

- Fetch the allergy intolerances associated with a single patient that have the specified status.

```
GET https://testagency.echoehr.com/fhir/r4/AllergyIntolerance?patient={Patient Id}&clinicalStatus={active, inactive, resolved}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/AllergyIntolerance?patient=20210507052150504189B33B3620B48B4B83&clinicalStatus=active
```

Appointment

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The Appointment resource returns information about scheduled meetings between patients and practitioners. These meetings may be scheduled in the future or have already occurred. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Create
- Read
- Update
- Search

Search Parameters:

- date
- patient
- practitioner

API Request Examples:

- Get a list of all appointments for all patients.

```
GET https://testagency.echoehr.com/fhir/r4/Appointment
```

- Get a list of all appointments for a specific patient.

```
GET https://testagency.echoehr.com/fhir/r4/Appointment?patient={Patient ID}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Appointment?patient=20210507052150504189B33B3620B48B4B83
```

- Get a list of all appointments for a specific practitioner.

```
GET https://testagency.echoehr.com/fhir/r4/Appointment?practitioner={Practitioner ID}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Appointment?practitioner=20191230091414559E9E09E2DF7154366B47
```

- Get a list of all appointments for specific patient and practitioner combination occurring after a specified date.

```
GET https://testagency.echoehr.com/fhir/r4/Appointment?patient={Patient ID}&practitioner={Practitioner ID}&date=gt{YYYY-MM-DD}
```

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For example,

GET <https://testagency.echoehr.com/fhir/r4/Appointment?patient=20210507052150504189B33B3620B48B4B83&practitioner=20191230091414559E9E09E2DF7154366B47&date=gt2021-12-31>

Date Parameter Supported Operators:

- equal - default

ex: <https://testagency.echoehr.com/fhir/r4/Appointment?date=2022-01-01>

- greater than - **gt**

ex: <http://testagency.echoehr.com/fhir/r4/Appointment?date=gt2022-01-01>

- greater than or equals - **ge**

ex: <http://testagency.echoehr.com/fhir/r4/Appointment?date=ge2022-01-01>

- less than - **lt**

ex: <http://testagency.echoehr.com/fhir/r4/Appointment?date=lt2022-01-01>

- less than or equals - **le**

ex: <http://testagency.echoehr.com/fhir/r4/Appointment?date=le2022-01-01>

CarePlan

The Care Plan resource searches and fetches assessment and plan of treatment data for each patient record provided it satisfies the search criteria (if any). We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- patient
- category
- date
- status

API Request Examples:

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- Query all care plans for a specific patient.

GET `https://testagency.echoehr.com/fhir/r4/CarePlan?patient=<client id>&category=assess-plan`

For example,

GET `https://testagency.echoehr.com/fhir/r4/CarePlan?patient=20210507052150504189B33B3620B48B4B83&category=assess-plan`

- Query care plans for a patient that are on or after a specific date.

GET `https://testagency.echoehr.com/fhir/r4/CarePlan?patient=<client id>&category=assess-plan&date=geYYYY-MM-DD`

For example,

GET `https://testagency.echoehr.com/fhir/r4/CarePlan?patient=20210507052150504189B33B3620B48B4B83&category=assess-plan&date=ge2022-08-01`

Date Parameter Supported Operators:

- equal - default

ex: `https://testagency.echoehr.com/fhir/r4/CarePlan?patient=<client id>&date=2022-01-01`

- greater than - **gt**

ex: `https://testagency.echoehr.com/fhir/r4/CarePlan?patient=<client id>&date=gt2022-01-01`

- greater than or equals - **ge**

ex: `https://testagency.echoehr.com/fhir/r4/CarePlan?patient=<client id>&date=ge2022-01-01`

- less than - **lt**

ex: `https://testagency.echoehr.com/fhir/r4/CarePlan?patient=<client id>&date=lt2022-01-01`

- less than or equals - **le**

ex: `https://testagency.echoehr.com/fhir/r4/CarePlan?patient=<client id>&date=le2022-01-01`

A composite *AND* search on date (e.g., `date=ge2022-08-00&date=le2022-08-31`) is **NOT** supported.

Condition

The Condition returns information on a Client's active and inactive diagnoses. We follow the referenced documentation implementation unless otherwise noted.

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Supported Actions:

- Read
- Search

Search Parameters:

- patient
- category
- clinical-status
- code
- onset-date

API Request Examples:

- Get a bundle of all conditions for a single patient, both problem-list-item and encounter-diagnosis.

GET https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}

For example,

GET https://testagency.echoehr.com/fhir/r4/Condition?patient=20210507052150504189B33B3620B48B4B83

- Get a bundle of all conditions for a specific category and patient.

GET https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}&category={Problem List or Encounter }

For example,

GET https://testagency.echoehr.com/fhir/r4/Condition?patient=20210507052150504189B33B3620B48B4B83&category=problem-list-item

- Get a bundle of all active, conditions for a single patient as of the current date.

GET https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}&clinical-status={Active or Inactive}

For example,

GET https://testagency.echoehr.com/fhir/r4/Condition?patient=20210507052150504189B33B3620B48B4B83&clinical-status=active

- Get a single patient's condition for a specific diagnosis code.

GET https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}&code={ICD10 or Other Diganosis}

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For example,

```
GET https://testagency.echoehr.com/fhir/r4/Condition?patient=20210507052150504189B33B3620B48B4B83&code=F33.2
```

- Get all conditions for a single patient with a specific onset date.

```
GET https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}&onset-date={YYYY-MM-DD}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Condition?patient=20210507052150504189B33B3620B48B4B83&onset-date=2018-01-01
```

Onset-Date Parameter Supported Operators:

- equal - default

```
ex: https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}&onset-date=2022-01-01
```

- greater than - **gt**

```
ex: https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}&onset-date=gt2022-01-01
```

- greater than or equals - **ge**

```
ex: https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}&onset-date=ge2022-01-01
```

- less than - **lt**

```
ex: https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}&onset-date=lt2022-01-01
```

- less than or equals - **le**

```
ex: https://testagency.echoehr.com/fhir/r4/Condition?patient={Patient ID}&onset-date=le2022-01-01
```

A composite *AND* search on date (e.g., `date=ge2022-08-00&date=le2022-08-31`) is **NOT** supported.

Device

The Device resource fetches information associated with a patient's implantable medical device. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

Search Parameters:

- patient
- type

API Request Examples:

- Get implantable devices associated with a specific patient.

```
GET https://testagency.echoehr.com/fhir/r4/Device?patient={Patient ID}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Device?patient=20220727024115762D96BF5BDB50F4E44924
```

- Get a specific client associated with a specific device type.

```
GET https://testagency.echoehr.com/fhir/r4/Device?patient={Patient ID}&type={SNOMED DEVICE CODE}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Device?patient=20220727024115762D96BF5BDB50F4E44924&type=49062001
```

DiagnosticReport

The Diagnostic Report resource is used to summarize findings and test results from lab orders and radiology orders. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- patient
- category
- code
- date
- status

API Request Examples:

- Get all diagnostic reports for a specific patient.

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}

For example,

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient=20210507052150504189B33B3620B48B4B83

- Get all diagnostic reports of a specific category for a specific patient.

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}&category={}

For example,

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient=20210507052150504189B33B3620B48B4B83&category=LAB

- Get a specific diagnostic report by code for a specific patient

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}&code={}

For example,

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient=20210507052150504189B33B3620B48B4B83&code=123

- Get a diagnostic report by date for a specific patient.

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}&date={YYYY-MM-DD}

For example,

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient=20210507052150504189B33B3620B48B4B83&date=2022-09-02

- Get all diagnostic reports with the specified status for a specific patient.

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}&status={}

For example,

GET https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient=20210507052150504189B33B3620B48B4B83&status=final

Date Parameter Supported Operators:

- equal - default

ex: https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}&date=2022-01-01

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

- greater than - **gt**

ex: `https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}&date=gt2022-01-01`

- greater than or equals - **ge**

ex: `https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}&date=ge2022-01-01`

- less than - **lt**

ex: `https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}&date=lt2022-01-01`

- less than or equals - **le**

ex: `https://testagency.echoehr.com/fhir/r4/DiagnosticReport?patient={Patient ID}&date=le2022-01-01`

A composite *AND* search on date (e.g., `date=ge2022-08-00&date=le2022-08-31`) is **NOT** supported.

DocumentReference

The Document Reference resource identifies the location of a clinical note related to a patient, and may also be used to return a full Continuity of Care Document (CCD) when the type is 34133-9 (LOINC). We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- `_id`
- `patient`
- `category`
- `date`
- `period`
- `type`
- `status`

API Request Examples:

- Get using DocumentReference ID.

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?_id={clinical note id}

For example,

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?_id=20221102152952920DEB6044CA2BE4E8C889

- Get all document references of a specific category for a specific patient.

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&category=clinical-note

For example,

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient=2022062706421381743267E0A37254D8EBCD&category=clinical-note

- Get all document references for a specific patient and note type.

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&type=1155705

For example,

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient=2022062706421381743267E0A37254D8EBCD&type=1155705

- Get all document references for a specific patient and status.

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&status=current

For example,

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient=2022062706421381743267E0A37254D8EBCD&status=current

- Get all documents for a specific patient and note date or range of dates using a supported operator.

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&date={YYYY-MM-DD}

For example,

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient=2022062706421381743267E0A37254D8EBCD&date=2022-06-30

- Get a full CCD document for a specified period.

GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&type={LOINC}&period=geYYY-MM-DD&period=ltYYYY-MM-DD

For example,

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

```
GET https://testagency.echoehr.com/fhir/r4/DocumentReference?patient=2022062706421381743267E0A37254D8EBCD&type=34133-9&period=ge2022-01-01&period=lt2022-12-31
```

Date and Period Parameter Supported Operators:

- equal - default

```
https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&date=2022-01-01
```

- greater than - **gt**

```
https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&date=gt2022-01-01
```

- greater than or equals - **ge**

```
https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&date=ge2022-01-01
```

- less than - **lt**

```
https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&date=lt2022-01-01
```

- less than or equals - **le**

```
https://testagency.echoehr.com/fhir/r4/DocumentReference?patient={Patient ID}&date=le2022-01-01
```

A composite *AND* search on date (e.g., date=ge2022-08-00&date=le2022-08-31) is **ONLY** supported for the period parameter.

Encounter

The Encounter resource queries and returns basic encounter information for an individual patient. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- `_id`
- `class`
- `date`
- `identifier`
- `patient`

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

- status
- type

API Request Examples:

- Get a specific encounter's information by id.

```
GET https://testagency.echoehr.com/fhir/r4/Encounter/{service id}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Encounter/20220426063237373E292C428F8E04BB1941
```

- Get all encounter information for the specified patient.

```
GET https://testagency.echoehr.com/fhir/r4/Encounter?patient={Patient ID}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Encounter?patient=202206280502226278CE28390CDBE4EC8A2E
```

- Get all encounter information for the specified class for an individual patient.

```
GET https://testagency.echoehr.com/fhir/r4/Encounter?patient={Patient ID}&class={}
```

For example,

```
Get https://testagency.echoehr.com/fhir/r4/Encounter?patient=202206280502226278CE28390CDBE4EC8A2E&class=AMB
```

- Get all encounter information for a specific patient and date.

```
GET https://testagency.echoehr.com/fhir/r4/Encounter?patient={Patient ID}&date={YYYY-MM-DD}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Encounter?patient=202206280502226278CE28390CDBE4EC8A2E&date=2022-07-15
```

Date Parameter Supported Operators:

- equal - default

```
https://testagency.echoehr.com/fhir/r4/Encounter?patient={Patient ID}&date=2022-01-01
```

- greater than - **gt**

```
https://testagency.echoehr.com/fhir/r4/Encounter?patient={Patient ID}&date=gt2022-01-01
```

- greater than or equals - **ge**

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

```
https://testagency.echoehr.com/fhir/r4/Encounter?patient={Patient ID}&date=ge2022-01-01
```

- less than - **lt**

```
https://testagency.echoehr.com/fhir/r4/Encounter?patient={Patient ID}&date=lt2022-01-01
```

- less than or equals - **le**

```
https://testagency.echoehr.com/fhir/r4/Encounter?patient={Patient ID}&date=le2022-01-01
```

A composite *AND* search on date (e.g., date=ge2022-08-00&date=le2022-08-31) is **NOT** supported.

Goal

The Goal resource fetches Goal information for a specified patient. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- patient
- lifecycle-status
- target-date

API Request Examples:

- Fetch all care plan goals associated with an individual patient.

```
GET https://testagency.echoehr.com/fhir/r4/Goal?patient={Patient ID}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Goal?patient=20210507052150504189B33B3620B48B4B83
```

- Fetch all care plan goals of the specified lifecycle status associated with the specified patient.

```
GET https://testagency.echoehr.com/fhir/r4/Goal?patient={Patient ID}&lifecycle-status={planned/completed/proposed}
```

For example,

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

```
GET https://testagency.echoehr.com/fhir/r4/Goal?patient=20210507052150504189B33B3620B48B4B83&lifecycle-status=planned
```

- Fetch all care plan goals for the specified client that satisfy the specified target date.

```
GET https://testagency.echoehr.com/fhir/r4/Goal?patient={Patient ID}&target-date={YYYY-MM-DD}
```

For example,

```
Get https://testagency.echoehr.com/fhir/r4/Goal?patient=20210507052150504189B33B3620B48B4B83&target-date=2022-10-28
```

Date Parameter Supported Operators:

- equal - default

```
https://testagency.echoehr.com/fhir/r4/Goal?patient={Patient ID}&target-date=2022-01-01
```

- greater than - **gt**

```
https://testagency.echoehr.com/fhir/r4/Goal?patient={Patient ID}&target-date=gt2022-01-01
```

- greater than or equals - **ge**

```
https://testagency.echoehr.com/fhir/r4/Goal?patient={Patient ID}&target-date=ge2022-01-01
```

- less than - **lt**

```
https://testagency.echoehr.com/fhir/r4/Goal?patient={Patient ID}&target-date=lt2022-01-01
```

- less than or equals - **le**

```
https://testagency.echoehr.com/fhir/r4/Goal?patient={Patient ID}&target-date=le2022-01-01
```

A composite *AND* search on target date (e.g., target-date=ge2022-08-00&target-date=le2022-08-31) is **NOT** supported.

Immunization

We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

- patient
- date
- status

API Request Examples:

- Get all immunization information for a single patient

GET https://testagency.echoehr.com/fhir/r4/Immunization?patient={Patient ID}

For example,

GET https://testagency.echoehr.com/fhir/r4/Immunization?patient=20210507052150504189B33B3620B48B4B83

- Get information on immunizations of a specific status for a single patient

GET https://testagency.echoehr.com/fhir/r4/Immunization?patient={Patient ID}&status={}

For example,

GET https://testagency.echoehr.com/fhir/r4/Immunization?patient=20210507052150504189B33B3620B48B4B83
&status=complete

- Get immunization information for a single patient that satisfies the specified date parameter

GET https://testagency.echoehr.com/fhir/r4/Immunization?patient={Patient ID}&date={YYYY-MM-DD}

For example,

GET https://testagency.echoehr.com/fhir/r4/Immunization?patient=20210507052150504189B33B3620B48B4B83
&date=ge2022-07-15

Date Parameter Supported Operators:

- equal - default

https://testagency.echoehr.com/fhir/r4/Immunization?patient={Patient ID}&date=2022-01-01

- greater than - **gt**

https://testagency.echoehr.com/fhir/r4/Immunization?patient={Patient ID}&date=gt2022-01-01

- greater than or equals - **ge**

https://testagency.echoehr.com/fhir/r4/Immunization?patient={Patient ID}&date=ge2022-01-01

- less than - **lt**

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

```
https://testagency.echoehr.com/fhir/r4/Immunization?patient={Patient ID}&date=lt2022-01-01
```

- less than or equals - **le**

```
https://testagency.echoehr.com/fhir/r4/Immunization?patient={Patient ID}&date=le2022-01-01
```

A composite *AND* search on date (e.g., date=ge2022-08-00&date=le2022-08-31) is **NOT** supported.

Location

The Location resource returns the supported search information for a Location associated with a patient, provider, or organization. We follow the referenced implementation documentation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- _id
- name
- address
- address-city
- address-state
- address-postalcode

API Request Examples:

- Fetches location resource information by id.

```
GET https://testagency.echoehr.com/fhir/r4/Location/2022070808102853451189680A6BA4A258C5
```

- Fetches resource information by location name.

```
GET https://testagency.echoehr.com/fhir/r4/Location?name={abc}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Location?name=PeertoPeerBehavioralHealth
```

- Fetches resource information by Location address

```
GET https://testagency.echoehr.com/fhir/r4/Location?address={123 xyz}
```

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

For example,

GET https://testagency.echoehr.com/fhir/r4/Location?address=1600 Washington

- Fetches resource information by location city

GET https://testagency.echoehr.com/fhir/r4/Location?address-city={SomeCity}

For example,

GET https://testagency.echoehr.com/fhir/r4/Location?address-city=Conway

- Fetches resource information by location state

GET https://testagency.echoehr.com/fhir/r4/Location?address-state={}

For example,

GET https://testagency.echoehr.com/fhir/r4/Location?address-state=NH

- Fetches resource information by location postal code

GET https://testagency.echoehr.com/fhir/r4/Location?address-postalcode={}

For example,

GET https://testagency.echoehr.com/fhir/r4/Location?address-postalcode=03818

Medication

The Medication resource enables the searching and fetching of a specific medication's details by the record id. We follow the referenced implementation documentation unless otherwise noted.

Supported Action:

- Read

API Request Example:

GET https://testagency.echoehr.com/fhir/Medication/{ABC123}

For example,

GET https://testagency.echoehr.com/fhir/r4/Medication/20220104224634867E3A045203B8E4567B17

MedicationAdministration

The Medication Administration resource covers the administration of all patient medication(s). We follow the reference implementation unless otherwise noted.

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

Supported Actions:

- Create
- Read
- Update

API Request Examples:

- View medication administration information by patient id

GET https://testagency.echoehr.com/fhir/r4/MedicationAdministration?patient={Patient ID}

For example,

GET https://testagency.echoehr.com/fhir/r4/MedicationAdministration?patient=20210507072116915BD661D990E4C44CC95A

MedicationRequest

The Medication Request resource fetches a patient's medication prescription or order details. Patient and intent are required search parameters. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- intent
- patient
- authoredon
- encounter
- status

API Request Examples:

- Fetches all of a patient's requested medication orders.

GET https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient={Patient ID}&intent={order}

For example,

GET https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient=20210507072116915BD661D990E4C44CC95A&intent=order

- Fetches all of a patient's active medication orders.

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

GET <https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient={Patient ID}&intent={order}&status={active, completed, or stopped}>

For example,

GET <https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient=20210507072116915BD661D990E4C44CC95A&intent=order&status=active>

- Fetches all of a patient's medication orders written as of the specified date search parameter.

GET <https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient={Patient ID}&intent={order}&authoredon={YYYY-MM-DD}>

For example,

GET <https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient=20210507072116915BD661D990E4C44CC95A&intent=order&authoredon=2022-01-04>

Date Parameter Supported Operators:

- equal - default

<https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient=123&intent=order&authoredon=01/01/2020>

- greater than - **gt**

<https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient=123&intent=order&authoredon=gt01/01/2020>

- greater than or equals - **ge**

<https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient=123&intent=order&authoredon=ge01/01/2020>

- less than - **lt**

<https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient=123&intent=order&authoredon=lt01/01/2020>

- less than or equals - **le**

<https://testagency.echoehr.com/fhir/r4/MedicationRequest?patient=123&intent=order&authoredon=le01/01/2020>

A composite *AND* search on the authored on date (e.g., `authoredon=ge2022-08-00&authoredon=le2022-08-31`) is **NOT** supported.

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

Observation

The Observation resource supports searching and fetching patient data in the following three categories: social-history, vital-signs, and laboratory. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- patient
- category
- code (supports multiple codes separated by comma)
- date
- status

Supported Category Parameters:

- social-history

- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&category=social-history`

- vital-signs

- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&category=vital-signs`

- laboratory

- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&category=laboratory`

API Request Examples:

- Fetch a bundle of all observations for the specified client and category.

```
GET https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&category={ABC}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Observation?patient=20210507052150504189B33B3620B48B4B83&category=social-history
```

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

- Fetch a bundle of observations for the specified patient and code

Get `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code={LOINC code}`

For example,

GET `https://testagency.echoehr.com/fhir/r4/Observation?patient=20210507052150504189B33B3620B48B4B83&code=39156-5`

- Fetch a bundle of observations for the specified codes and patient that occurred after the given date.

GET `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code={Loinc Codes separated by commas}&date=gt{YYYY-MM-DD}`

For example,

GET `https://testagency.echoehr.com/fhir/r4/Observation?patient=20210507052150504189B33B3620B48B4B83&code=85354-9,8867-4&date=gt2021-12-31`

LOINC Code Parameter Examples:

- [BMI](#) - 39156-5

○ ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=39156-5`

- [Body Temperature](#) - 8310-5

○ ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=8310-5`

- [Blood Pressure \(Diastolic and Systolic\)](#) - 85354-9

○ ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=85354-9`

- Blood Pressure (Systolic) - 8480-6

▪ ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=8480-6`

- Blood Pressure (Diastolic) - 8462-4

▪ ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=8462-4`

- [Heart Rate](#) - 8867-4

○ ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=8867-4`

- [Body Height](#) - 8302-2

Certified API technology means the capabilities of Health IT Modules that are certified to any of the API-focused certification criteria adopted in § 170.315(g)(7) through (10).

EchoVantage FHIR API Documentation

- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=8302-2`
- Laboratory - multiple codes supported, for example, LOINC 26515-7 — Platelets [# /volume] in Blood.
 - ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=26515-7`
-
- [Pediatric BMI](#) - 59576-9
 - ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=59576-9`
- [Pediatric Head Occipital-frontal Circumference](#) - 8289-1
 - ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=8289-1`
- [Head Circumference](#) - 9843-4
 - ex: `https://testagency.echoehr.com/fhir/Observation?patient={Patient ID}&code=9843-4`
- [Pediatric Weight for Height](#) - 77606-2
 - ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=77606-2`
- [Oxygen Saturation by Pulse Oximetry](#)
 - PulseOx - 59408-5
 - FlowRate - 3151-8
 - ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=59408-5`
 - Oxygen Saturation - 2708-6
 - Concentration - 3150-0
 - ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=2708-6`
- [Respiratory Rate](#) - 9279-1
 - ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=9279-1`
- [Smoking Status](#) - 72166-2
 - ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=72166-2`
- [Body Weight](#) - 29463-7

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- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&code=29463-7`

Date Parameter Supported Operations:

- equal - default

- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&date=2022-01-01`

- greater than - **gt**

- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&date=gt2022-01-01`

- greater than or equals - **ge**

- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&date=ge2022-01-01`

- less than - **lt**

- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&date=lt2022-01-01`

- less than or equals - **le**

- ex: `https://testagency.echoehr.com/fhir/r4/Observation?patient={Patient ID}&date=le2022-01-01`

A composite *AND* search on date (e.g., `date=ge2022-08-00&date=le2022-08-31`) is **NOT** supported.

Organization

The Organization resource allows searching and fetching information for an organization associated with a patient or practitioner. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- name
- address

API Request Examples:

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- Get organization information that full or partially matches the supplied name.

GET https://testagency.echoehr.com/fhir/r4/Organization?name={abc}

For example,

Get https://testagency.echoehr.com/fhir/r4/Organization?name=Peer to Peer

- Get organization information that full or partially matches the supplied address.

GET https://testagency.echoehr.com/fhir/r4/Organization?address={123xyz}

For example,

GET https://testagency.echoehr.com/fhir/r4/Organization?address=15 Washington

Patient

The Patient resource supports create, read, and search actions to query, fetch, and update basic patient demographic information. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Create
- Read
- Search

Search Parameters:

- _id
- birthdate
- family
- name
- identifier
- gender

API Request Examples:

- Fetches demographic information for all patients.

GET https://testagency.echoehr.com/fhir/r4/Patient

- Fetches demographic information for a specific patient by record id

GET https://testagency.echoehr.com/fhir/r4/Patient/{Patient ID}

For example,

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```
GET https://testagency.echoehr.com/fhir/r4/Patient/20210507052150504189B33B3620B48B4B83
```

- Fetches demographic information for all patients associated with the specified gender.

```
GET https://testagency.echoehr.com/fhir/r4/Patient?gender=female
```

- Fetches demographic information for the specified patient and birthdate.

```
GET https://testagency.echoehr.com/fhir/r4/Patient?identifier={Client Code}&birthdate={YYYY-MM-YY}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Patient?identifier=PEB00001&birthdate=1984-05-30
```

Birthdate Parameter Supported operators:

- equal - default

```
ex: https://testagency.echoehr.com/fhir/r4/Patient?birthdate=2022-01-01
```

- greater than - **gt**

```
ex: https://testagency.echoehr.com/fhir/r4/Patient?birthdate=gt2022-01-01
```

- greater than or equals - **ge**

```
ex: https://testagency.echoehr.com/fhir/r4/Patient?birthdate=ge2022-01-01
```

- less than - **lt**

```
ex: https://testagency.echoehr.com/fhir/r4/Patient?birthdate=lt2022-01-01
```

- less than or equals - **le**

```
ex: https://testagency.echoehr.com/fhir/r4/Patient?birthdate=le2022-01-01
```

A composite *AND* search on birthdate (e.g., birthdate=ge2022-08-00&birthdate=le2022-08-31) is **NOT** supported.

Practitioner

The Practitioner resource queries and fetches information on the activities and responsibilities of a person who is directly or indirectly involved in the provisioning of healthcare. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read

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- Search

Search Parameters:

- identifier
- name
- given
- family

API Request Examples:

- Fetch a practitioner by name.

```
GET https://testagency.echoehr.com/fhir/r4/Practitioner?name={abc}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Practitioner?name=john t smith
```

- Fetch a practitioner by NPI number.

```
GET https://testagency.echoehr.com/fhir/r4/Practitioner?identifier=http://hl7.org/fhir/sid/us-npi%7c{some-npi}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Practitioner?identifier=http://hl7.org/fhir/sid/us-npi%7c0123456789
```

- Fetch a practitioner by the agency-assigned staff code.

```
GET https://testagency.echoehr.com/fhir/r4/Practitioner?identifier={some-staff-code}
```

For example,

```
GET https://testagency.echoehr.com/fhir/r4/Practitioner?identifier=HJS123
```

PractitionerRole

The Practitioner Role resource fetches a bundle containing the required practitioner role information. We follow the referenced documentation implementation unless otherwise noted.

Supported actions:

- Read
- Search

Search Parameters:

- practitioner
- specialty

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API Request Examples:

- Fetch an individual practitioner's role information.

GET https://testagency.echoehr.com/fhir/r4/PractitionerRole?practitioner={staff id}

For example,

GET https://testagency.echoehr.com/fhir/r4/PractitionerRole?practitioner=20221103022736763B0025ED48C7D4FDB932

- Fetch all practitioner role information for the specified specialty.

GET https://testagency.echoehr.com/fhir/r4/PractitionerRole?specialty={taxonomy code}

For example,

GET https://testagency.echoehr.com/fhir/r4/PractitionerRole?specialty=1041C0700X

Procedure

The Procedure resource supports searching and fetching procedures for a patient in combination with the supported search parameters if provided. We follow the referenced documentation implementation unless otherwise noted.

Supported Actions:

- Read
- Search

Search Parameters:

- patient
- code
- date
- status

API Request Examples:

- Fetch a bundle of procedure resources for the specified patient.

GET https://testagency.echoehr.com/fhir/r4/Procedure?patient={Patient ID}

For example,

GET https://testagency.echoehr.com/fhir/r4/Procedure?patient=2022062706421381743267E0A37254D8EBCD

- Fetch a bundle of procedure resources for the specified patient and date

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GET https://testagency.echoehr.com/fhir/r4/Procedure?patient={Patient ID}&date={YYYY-MM-YY}

For example,

GET https://testagency.echoehr.com/fhir/r4/Procedure?patient=2022062706421381743267E0A37254D8EBCD&date=gt2022-11-09

- Fetch a bundle of all resources with the specified status.

GET https://testagency.echoehr.com/fhir/r4/Procedure?patient={Patient ID}&status={preparation or completed}

For example,

GET https://testagency.echoehr.com/fhir/r4/Procedure?patient=2022062706421381743267E0A37254D8EBCD&status=completed

Provenance

The Provenance of a resource is a record that supports the lineage of information involved in producing, delivering, or otherwise influencing that resource. A Provenance record could contain the original author, transmitter, and date and time for the activity. We follow the reference implementation unless otherwise noted.

Supported Actions:

- Search

Search Parameters:

- patient
- _revinclude
- _id
- target

Supported Resources			
AllergyIntolerance	CarePlan	CareTeam	Condition
DiagnosticReport - Lab Results	DiagnosticReport - Report & Note Exchange	DocumentReference	Encounter
Goal	Immunization	Implantable Device	Observation - Lab Results
MedicationRequest	Patient	Observation - Pediatric BMI	Observation - Pediatric Weight for Height

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Procedure

Pulse Oximetry

Observation - Smoking
Status

Vital Signs

API Request Examples:

- Fetches a bundle of all the Patient's Conditions along with the Provenance for each Condition.

GET https://testagency.echoehr.com/fhir/r4/Condition?_revinclude=Provenance:target&patient={Patient ID}

For example,

GET https://testagency.echoehr.com/fhir/r4/Condition?_revinclude=Provenance:target&patient=2022062706421381743267E0A37254D8EBCD

- Fetches a bundle of information for the specified resource and patient.

GET https://testagency.echoehr.com/fhir/r4/Provenance?target=Encounter&patient={Patient ID}

For example,

GET https://testagency.echoehr.com/fhir/r4/Provenance?target=Encounter&patient=2022062706421381743267E0A37254D8EBCD

- Fetches a bundle of information for the specified resource and data id.

GET https://testagency.echoehr.com/fhir/r4/Provenance?target=Practitioner&_id={table id column}

For example,

GET https://testagency.echoehr.com/fhir/r4/Provenance?target=Practitioner&_id=2022032303235605424D5D44D7FBD4CE482F

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