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## Product Name and Version : GeeseMed 7.1

## INTRODUCTION

In this documentation we will list all the steps required to access protected health information based on the documentation of an open API. The API makes health information broadly available using FHIR®, a set of clinical interoperability resources under the umbrella of the HL7 standards organization. FHIR is based on common web standards can be reached through a RESTful protocol in which each FHIR resource has a known URL. This document describes OAuth 2.0 for client applications to authorize, authenticate, and integrate with FHIR-based data systems.

We follow Smart-On-FHIR authentication (OAuth2) and authorization (Ref. <http://hl7.org/fhir/smart-app-launch/toc.html> )

## FHIR Endpoints

Note: Production and Test Server endpoints are subject to change.

### Production Endpoint

- FHIR: Will be available upon request
- Authentication Server: Will be available upon request

### Test Server Endpoint

- FHIR : <https://apidev.geesemed.com:9443/fhir-server/api/v4/>
- Authentication Server: <https://connect.geesemed.com/>

## Types of Smart-On-FHIR applications

- Standalone App: SMART on FHIR confidential client with a patient context, refresh token, and OpenID Connect (OIDC) identity token.
- EHR Embedded app: Demonstrate the ability to perform an EHR launch to a SMART on FHIR
- Smart Backend Services App (Multi-patient authorization and API) : These are server-to-server backend applications e.g. Export clinical data for multiple patients in a group. This app is system level app without any UI.

## Types of Authentications supported

- Symmetric (“client secret”) authentication ([HL7.FHIR.UV.SMART-APP-LAUNCH\Example App Launch for Symmetric Client Auth - FHIR v4.0.1](#))
- Asymmetric (“private key JWT”) authentication ([HL7.FHIR.UV.SMART-APP-LAUNCH\Example App Launch for Asymmetric Client Auth - FHIR v4.0.1](#))
- Public Clients ([HL7.FHIR.UV.SMART-APP-LAUNCH\Example App Launch for Public Client - FHIR v4.0.1](#))

## Steps for Smart App Launch

1. Client App Registration
2. Retrieve well-known/smart-configuration
3. Obtain authorization code
4. Obtain access token
5. Access FHIR API
6. Refresh Token to obtain new access token

## Client APP Registration

Before a SMART app can run against an EHR, the app must be registered with that EHR’s authorization service. We are using OAuth 2.0 Client Registration.



## Client App Request process

- Third-party application must sign the *API Subscription Agreement* with following details
  - The app developer name
  - The necessary APIs / Scopes
  - Any redirect URIs
  - Launch\_URL (optional)
  - URL to JWK Set (Only for apps supporting asymmetric client authentication).
- Submit above details with your contact info. on [itsupport@mdofficemanager.com](mailto:itsupport@mdofficemanager.com). **OR** call on 502-409-1274
- The application is created by the EHR admin after confirming the app's registration parameters and communicates a client\_id to the app.
  - FHIR APIs (of any supported version) listed within the USCDI v1 core data set will be supported
  - Only reads data from FHIR server

## Retrieve .well-known/smart-configuration

In order to obtain launch context and request authorization to access FHIR resources, the app discovers the EHR FHIR server's SMART configuration metadata, including OAuth authorization\_endpoint and token\_endpoint URLs.

FHIR server makes SMART configuration available from well-known endpoint. You can get Authorization end point and token endpoint.

### Request

GET 200 [https://\[FHIRBaseURL\]/r4/.well-known/smart-configuration](https://[FHIRBaseURL]/r4/.well-known/smart-configuration)

### Response

```
{
  "capabilities": [
    "launch-ehr",
    "launch-standalone",
    "client-public",
    "client-confidential-symmetric",
    "sso-openid-connect",
    "context-banner",
    "context-style",
    "context-ehr-patient",
    "context-ehr-encounter",
    "context-standalone-patient",
    "context-standalone-encounter",
    "permission-offline",
    "permission-patient",
    "permission-user"
  ],
  "revocation_endpoint": "https://[FHIRBaseURL]/oauth/token/ revoke-token",
  "authorization_endpoint": "https://[FHIRBaseURL]/oauth/authorization",
  "token_endpoint": "https://[FHIRBaseURL]/oauth/token"
}
```

### Error codes

JSON response is returned from the FHIR Server along with the code

200: Ok

401: Unauthorized

400: Bad Request

500: Internal Server Error

## Obtain authorization code

The app supplies the following parameters to the EHR's "authorize" endpoint.



## Parameters

|                      |                    |   |
|----------------------|--------------------|---|
| <b>response_type</b> | <b>required</b>    | Fixed value: <code>code</code> .  |
| <b>client_id</b>     | <b>required</b>    | The client's identifier.  |
| <b>redirect_uri</b>  | <b>required</b>    | Must match one of the client's pre-registered redirect URIs.  |
| <b>launch</b>        | <b>conditional</b> | When using the <b>EHR Launch</b> flow, this must match the launch value received from the EHR. Omitted when using the <b>Standalone Launch</b> .  |
| <b>scope</b>         | <b>required</b>    | Must describe the access that the app needs, including scopes like <code>patient/*.rs</code> , <code>openid</code> and <code>fhirUser</code> (if app needs authenticated patient identity) and either:<br><br>a <code>launch</code> value indicating that the app wants to receive already-established launch context details from the EHR<br><br>a set of launch context requirements in the form <code>launch/patient</code> , which asks the EHR to establish context on your behalf.<br><br>Please refer to the scopes supported in the table below |
| <b>state</b>         | <b>required</b>    | An opaque value used by the client to maintain state between the request and callback. The authorization server includes this value when redirecting the user-agent back to the client. The parameter SHALL be used for preventing cross-site request forgery or session fixation attacks. The app SHALL use an unpredictable value for the state parameter with at least 122 bits of entropy (e.g., a properly configured random uuid is suitable).  |

|            |                 |   |
|------------|-----------------|---|
| <b>aud</b> | <b>required</b> | URL of the EHR resource server from which the app wishes to retrieve FHIR data. This parameter prevents leaking a genuine bearer token to a counterfeit resource server. (Note that in the case of an <b>EHR launch</b> flow, this <code>aud</code> value is the same as the launch's <code>iss</code> value.) Note that the <code>aud</code> parameter is semantically equivalent to the <code>resource</code> parameter defined in <a href="#">RFC8707</a> . SMART's <code>aud</code> parameter predates RFC8707 and we have decided not to rename it for reasons of backwards compatibility. We might consider renaming SMART's <code>aud</code> parameter in the future if implementer feedback indicates that alignment would be valuable. For the current release, servers SHALL support the <code>aud</code> parameter and MAY support a <code>resource</code> parameter as a synonym for <code>aud</code> . |
|------------|-----------------|---|

## Scopes Supported

| Scope  | Grants  |
|--|---|
| <code>patient/*.read</code>                  | Permission to read and search any resource for the current patient (see notes on wildcard scopes below).  |
| <code>user/*.read</code>                     | Permission to read and write all resources that the current user can access (see notes on wildcard scopes below).   |
| <code>openid</code><br><code>fhirUser</code> | Permission to retrieve information about the current logged-in user.  |
| <code>launch</code>                          | Permission to obtain launch context when app is launched from an EHR.   |
| <code>launch/patient</code>                  | When launching outside the EHR, ask for a patient to be selected at launch time.  |
| <code>offline_access</code>                  | Request a <code>refresh_token</code> that can be used to obtain a new access token to replace an expired one, even after the end-user no longer is online after the access token expires. |

Here's an example of an authorization request using HTTP GET. You will replace the `[redirect_uri]`, `[client_id]`, `[launch_token]`, `[state]`, `[code_challenge]`, and `[audience]` placeholders with your own values.



## Request

```
https://ehr/authorize?
  response_type=code&
  client_id=app-client-id&
  redirect_uri=https%3A%2F%2Fapp%2Fafter-auth&
  launch=xyz123&
  scope=launch+patient%2FObservation.rs+patient%2FPatient.rs+openid+fhirUser&
  state=98wrghuwoogerg97&
  aud=https://ehr/fhir
```

e.g.

[https://\[FHIRBaseURL\]/oauth/authorization?response\\_type=code&client\\_id=SAMPLE\\_CONFIDENTIAL\\_CLIENT\\_ID&redirect\\_uri=https%3A%2F%2Finferno.healthit.gov%2Finferno%2Foauth%2Fstatic%2Fredirect&scope=launch%2Fpatient+openid+fhirUser+offline\\_access+patient%2FMedication.read+patient%2FAllergyIntolerance.read+patient%2FCarePlan.read+patient%2FCareTeam.read+patient%2FCondition.read+patient%2FDevice.read+patient%2FDiagnosticReport.read+patient%2FDocumentReference.read+patient%2FEncounter.read+patient%2FGoal.read+patient%2FImmunization.read+patient%2FLocation.read+patient%2FMedicationRequest.read+patient%2FObservation.read+patient%2FOrganization.read+patient%2FPatient.read+patient%2FPractitioner.read+patient%2FProcedure.read+patient%2FProvenance.read+patient%2FPractitionerRole.read&state=26a45e37-7445-4e4a-b8fb-24144eccbdc4&aud=https%3A%2F%2Finferno.healthit.gov%2Freference-server%2Fr4](https://[FHIRBaseURL]/oauth/authorization?response_type=code&client_id=SAMPLE_CONFIDENTIAL_CLIENT_ID&redirect_uri=https%3A%2F%2Finferno.healthit.gov%2Finferno%2Foauth%2Fstatic%2Fredirect&scope=launch%2Fpatient+openid+fhirUser+offline_access+patient%2FMedication.read+patient%2FAllergyIntolerance.read+patient%2FCarePlan.read+patient%2FCareTeam.read+patient%2FCondition.read+patient%2FDevice.read+patient%2FDiagnosticReport.read+patient%2FDocumentReference.read+patient%2FEncounter.read+patient%2FGoal.read+patient%2FImmunization.read+patient%2FLocation.read+patient%2FMedicationRequest.read+patient%2FObservation.read+patient%2FOrganization.read+patient%2FPatient.read+patient%2FPractitioner.read+patient%2FProcedure.read+patient%2FProvenance.read+patient%2FPractitionerRole.read&state=26a45e37-7445-4e4a-b8fb-24144eccbdc4&aud=https%3A%2F%2Finferno.healthit.gov%2Freference-server%2Fr4)

## Response

The EHR's authorization server reviews the request from your application. If approved, the authorization server redirects the browser to the redirect URL supplied in the initial request and appends the following querystring parameter.

- **code**: This parameter contains the authorization code generated by EHR, which will be exchanged for the access token in the next step.
- **state**: The exact value received from the client.

Here is how redirect URL will look like

Location: <https://app/after-auth?code=123abc&state=98wrghuwoogerg97>

[https://inferno.healthit.gov/inferno/oauth2/static/redirect?code=SAMPLE\\_CODE.bGF1bmNoL3BhdGllbnQgb3B8bmlkIGZoaXJvc2VyIG9mZmxpbmVfYWNjZnZlIHdhGllbnQvTWVkaWNhdGlvbi5yZWFKIHdhGllbnQvQWxsZXJneUludG9sZXJhbmNlLnJlYWQgcGF0aWVudC9DYXJlUGxhbi5yZWFKIHdhGllbnQvQ2FyZVRIYW0ucmVhZCBwYXRpZW50L0NvbmdGdGlvbi5yZWFKIHdhGllbnQvRGV2aWNlLnJlYWQgcGF0aWVudC9EaWFnbm9zdGllUmVwb3J0LnJlYWQgcGF0aWVudC9Eb2N1bWVudFJlZmVhZjZS5yZWFKIHdhGllbnQvRW5jb3VudGVyLnJlYWQgcGF0aWVudC9Hb2FsLnJlYWQgcGF0aWVudC9JbW11bml6YXRpb24ucmVhZCBwYXRpZW50L0xvY2F0aW9uLnJlYWQgcGF0aWVudC9NZWRpY2F0aW9uUmVxdWVzdC5yZWFKIHdhGllbnQvT2JzZXJ2YXRpb24ucmVhZCBwYXRpZW50L09yZ2FuaXphdGlvbi5yZWFKIHdhGllbnQvUGF0aWVudC5yZWFKIHdhGllbnQvUHJhY3RpdGlvbmVhLnJlYWQgcGF0aWVudC9Qcm9jZWR1cmUucmVhZCBwYXRpZW50L1Byb3ZlbnFuY2UucmVhZCBwYXRpZW50L1ByYWN0aXRpb25lclJvbGUucmVhZCA=.ODU=&state=26a45e37-7445-4e4a-b8fb-24144eccbdc4](https://inferno.healthit.gov/inferno/oauth2/static/redirect?code=SAMPLE_CODE.bGF1bmNoL3BhdGllbnQgb3B8bmlkIGZoaXJvc2VyIG9mZmxpbmVfYWNjZnZlIHdhGllbnQvTWVkaWNhdGlvbi5yZWFKIHdhGllbnQvQWxsZXJneUludG9sZXJhbmNlLnJlYWQgcGF0aWVudC9DYXJlUGxhbi5yZWFKIHdhGllbnQvQ2FyZVRIYW0ucmVhZCBwYXRpZW50L0NvbmdGdGlvbi5yZWFKIHdhGllbnQvRGV2aWNlLnJlYWQgcGF0aWVudC9EaWFnbm9zdGllUmVwb3J0LnJlYWQgcGF0aWVudC9Eb2N1bWVudFJlZmVhZjZS5yZWFKIHdhGllbnQvRW5jb3VudGVyLnJlYWQgcGF0aWVudC9Hb2FsLnJlYWQgcGF0aWVudC9JbW11bml6YXRpb24ucmVhZCBwYXRpZW50L0xvY2F0aW9uLnJlYWQgcGF0aWVudC9NZWRpY2F0aW9uUmVxdWVzdC5yZWFKIHdhGllbnQvT2JzZXJ2YXRpb24ucmVhZCBwYXRpZW50L09yZ2FuaXphdGlvbi5yZWFKIHdhGllbnQvUGF0aWVudC5yZWFKIHdhGllbnQvUHJhY3RpdGlvbmVhLnJlYWQgcGF0aWVudC9Qcm9jZWR1cmUucmVhZCBwYXRpZW50L1Byb3ZlbnFuY2UucmVhZCBwYXRpZW50L1ByYWN0aXRpb25lclJvbGUucmVhZCA=.ODU=&state=26a45e37-7445-4e4a-b8fb-24144eccbdc4)

After receiving the authorization code, your application trades the code for a JSON object containing an access token and contextual information by sending an HTTP POST to the token endpoint using a Content-Type header with value of "application/x-www-form-urlencoded".





```
"smart_style_url": "https://[FHIRBaseURL]/app/smart-style-url",  
"token_type": "bearer",  
"expires_in": 3600  
}
```

## Error codes

JSON response is returned from the FHIR Server along with the code

200: OK

401: Unauthorized

400: Bad Request

500: Internal Server Error

At this point, **the authorization flow is complete.**



## Access FHIR API

With a valid access token, the app can access protected EHR data by issuing a FHIR API call to the FHIR endpoint on the EHR's resource server. Only HTTP GET request types are supported while accessing FHIR Resource API. Following resources are supported

### FHIR Resource

Allergies and Intolerances

Assessment and Plan of Treatment

Care Team Members

Clinical Notes - US Core [DocumentReference](#) Profile & US Core [DiagnosticReport](#) Profile for Report and Note Exchange

Goals - US Core [Goal](#) Profile

Health Concerns - US Core [Condition](#) Profile

Immunizations - US Core [Immunization](#) Profile

Laboratory - US Core [Laboratory Result Observation](#) Profile & US Core [DiagnosticReport](#) Profile for Laboratory Results Reporting

Medications - US Core [Medication](#) Profile, US Core [MedicationRequest](#) Profile, US Core [AllergyIntolerance](#) Profile

Patient Demographics - US Core [Patient](#) Profile

Problems - US Core [Condition](#) Profile

Procedures - US Core [Procedure](#) Profile

Provenance - US Core [Provenance](#) Profile

Smoking Status - US Core [Smoking Status Observation](#) Profile

Unique Device Identifier(s) for Patient's Implantable Device(s) - US Core [ImplantableDevice](#) Profile

Vital Signs - FHIR Core [VitalSigns](#) Profile

## Request : Patient

Search Parameters

**\_id**: GET [Base\_URL]/Patient/\_search?Patient=[id]

**Identifier**: GET [Base\_URL]/Patient?identifier={system}[code]

**Name**: GET [Base\_URL]/Patient?name={string}

**birthdate + name**: GET [Base\_URL]/Patient?birthdate={date}&name={string}

**gender + name**: GET [Base\_URL]/Patient?gender={system}[code]&name={string}

Response

US Core Patient Profile as specified in the [US Core v3.1.1 Implementation Guide](#)

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "6f1d6f2d-c42b-453b-8f5a-8d74c24f6fb6",
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://FHIR-Base-URL/api/v4/Patient?_count=10&_id=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b",
      "fullUrl": "https://FHIR-Base-URL/api/v4/Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b",
    }
  ]
}
```



```
"resource": {
  "resourceType": "Patient",
  "id": "17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b",
  "meta": {
    "versionId": "3",
    "lastUpdated": "2022-03-24T10:50:49.231Z",
    "profile": [
      "http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient"
    ]
  },
  "text": {
    "status": "generated",
    "div": "<div xmlns=\\"http://www.w3.org/1999/xhtml\">Generated by <a href=\\"https://github.com/synthetichealth/synthea\">Synthea</a>.Version identifier:
v2.6.1-3-g50f4f58f\n . Person seed: 4286870567281389426 Population seed: 3</div>"
  },
  "extension": [
    {
      "extension": [
        {
          "url": "ombCategory",
          "valueCoding": {
            "system": "urn:oid:2.16.840.1.113883.6.238",
            "code": "2106-3",
            "display": "White"
          }
        },
        {
          "url": "text",
          "valueString": "White"
        }
      ],
      "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-race"
    },
    {
      "extension": [
        {
          "url": "ombCategory",
          "valueCoding": {
            "system": "urn:oid:2.16.840.1.113883.6.238",
            "code": "2186-5",
            "display": "Non Hispanic or Latino"
          }
        },
        {
          "url": "text",
          "valueString": "Non Hispanic or Latino"
        }
      ],
      "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-ethnicity"
    },
    {
      "url": "http://hl7.org/fhir/StructureDefinition/patient-mothersMaidenName",
      "valueString": "Christen366 Murray856"
    },
    {
      "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-birthsex",
      "valueCode": "M"
    },
    {
      "url": "http://hl7.org/fhir/StructureDefinition/patient-birthPlace",
      "valueAddress": {
        "city": "Springfield",
        "state": "Massachusetts",
        "country": "US"
      }
    }
  ],
  "identifier": [
```



```
{
  "system": "https://github.com/synthetichealth/synthea",
  "value": "e91975f5-9445-c11f-cabf-c3c6dae161f2"
},
{
  "type": {
    "coding": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
        "code": "MR",
        "display": "Medical Record Number"
      }
    ],
    "text": "Medical Record Number"
  },
  "system": "http://hospital.smarthealthit.org",
  "value": "e91975f5-9445-c11f-cabf-c3c6dae161f2"
},
{
  "type": {
    "coding": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
        "code": "SS",
        "display": "Social Security Number"
      }
    ],
    "text": "Social Security Number"
  },
  "system": "http://hl7.org/fhir/sid/us-ssn",
  "value": "999-61-9798"
},
{
  "type": {
    "coding": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
        "code": "DL",
        "display": "Driver's License"
      }
    ],
    "text": "Driver's License"
  },
  "system": "urn:oid:2.16.840.1.113883.4.3.25",
  "value": "S99940282"
},
],
"name": [
  {
    "use": "official",
    "family": "Harry",
    "given": [
      "Tom"
    ],
    "prefix": [
      "Mr."
    ],
    "suffix": [
      "Jr."
    ]
  },
  {
    "use": "maiden",
    "given": [
      "Alex"
    ]
  }
],
}
```



```
"telecom": [
  {
    "system": "phone",
    "value": "555-770-2787",
    "use": "home"
  }
],
"gender": "male",
"birthDate": "1941-09-05",
"address": [
  {
    "extension": [
      {
        "extension": [
          {
            "url": "latitude",
            "valueDecimal": 42.1343534042923
          },
          {
            "url": "longitude",
            "valueDecimal": -72.67217549422628
          }
        ]
      },
      {
        "url": "http://hl7.org/fhir/StructureDefinition/geolocation"
      }
    ],
    "line": [
      "599 Schowalter Promenade"
    ],
    "city": "West Springfield",
    "state": "MA",
    "postalCode": "01089",
    "country": "US",
    "period": {
      "start": "1940-09-05"
    }
  }
],
"maritalStatus": {
  "coding": [
    {
      "system": "http://terminology.hl7.org/CodeSystem/v3-MaritalStatus",
      "code": "M",
      "display": "M"
    }
  ],
  "text": "M"
},
"multipleBirthBoolean": false,
"communication": [
  {
    "language": {
      "coding": [
        {
          "system": "urn:ietf:bcp:47",
          "code": "en-US",
          "display": "English"
        }
      ],
      "text": "English"
    }
  }
],
"search": {
  "mode": "match",
  "score": 1
}
```



MDofficeManager

[www.MDofficeManager.com](http://www.MDofficeManager.com)

}  
|  
}



## Request : AllergyIntolerance

### Search Parameters

GET GET [Base\_URL]/AllergyIntolerance?Patient=[id]

### Response

Each resource returned from the first search is expected to conform to the [US Core AllergyIntolerance Profile](#).

Code: 200 (Success)

```
{
  "resourceType": "AllergyIntolerance",
  "id": "17e7758c319-7955ecfe-94da-4071-8488-4ef21425ed85",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2022-01-20T11:56:52.889Z",
    "profile": [
      "http://hl7.org/fhir/us/core/StructureDefinition/us-core-allergyintolerance"
    ]
  },
  "clinicalStatus": {
    "coding": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-clinical",
        "code": "inactive"
      }
    ]
  },
  "verificationStatus": {
    "coding": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/allergyintolerance-verification",
        "code": "confirmed"
      }
    ]
  },
  "type": "allergy",
  "category": [
    "food"
  ],
  "criticality": "low",
  "code": {
    "coding": [
      {
        "system": "http://snomed.info/sct",
        "code": "300916003",
        "display": "Latex allergy"
      }
    ],
    "text": "Latex allergy"
  },
  "patient": {
    "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfdb2be4b"
  },
  "recordedDate": "1941-10-14T18:33:18-05:00",
  "reaction": [
    {
      "manifestation": [
        {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "271807003",
              "display": "skin rash"
            }
          ],
          "text": "skin rash"
        }
      ]
    }
  ]
}
```



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] }  
] }  
] }



## Request : CarePlan

GET [Base\_URL]/AllergyIntolerance?CarePlan=assess-plan&patient=[id]

e.g.

[https://\[Base\\_URL\]/CarePlan?category=assess-plan&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b](https://[Base_URL]/CarePlan?category=assess-plan&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b)

Response

Each resource returned from the first search is expected to conform to the [US Core CarePlan Profile](#).

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "79d7a78e-de9b-4c5c-b51d-45b72963ae1f",
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/CarePlan?_count=10&category=assess-plan&patient=Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e776e13ff-1ea7505d-f475-4f49-adde-30e69df86734",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/CarePlan/17e776e13ff-1ea7505d-f475-4f49-adde-30e69df86734",
      "resource": {
        "resourceType": "CarePlan",
        "id": "17e776e13ff-1ea7505d-f475-4f49-adde-30e69df86734",
        "meta": {
          "versionId": "2",
          "lastUpdated": "2022-01-21T10:56:06.304Z",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-careplan"
          ]
        },
        "text": {
          "status": "generated",
          "div": "<div xmlns='\"http://www.w3.org/1999/xhtml\">Care Plan for Fracture care.<br/>Activities: <ul><li>Fracture care</li><li>Fracture care</li></ul><br/>Care plan is meant to treat Fracture of clavicle.</div>"
        },
        "status": "active",
        "intent": "order",
        "category": [
          {
            "coding": [
              {
                "system": "http://hl7.org/fhir/us/core/CodeSystem/careplan-category",
                "code": "assess-plan"
              }
            ]
          },
          {
            "coding": [
              {
                "system": "http://snomed.info/sct",
                "code": "384758001",
                "display": "Self-care interventions (procedure)"
              }
            ],
            "text": "Self-care interventions (procedure)"
          }
        ],
        "subject": {
          "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b"
        }
      }
    }
  ]
}
```



```
},
"encounter": {
  "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
},
"period": {
  "start": "1941-10-02T18:33:18-05:00"
},
"careTeam": [
  {
    "reference": "CareTeam/17e775e7546-36e6a4cd-264e-4a94-92fa-cdf1b2fa30c1"
  }
],
"activity": [
  {
    "detail": {
      "code": {
        "coding": [
          {
            "system": "http://snomed.info/sct",
            "code": "409002",
            "display": "Food allergy diet"
          }
        ],
        "text": "Food allergy diet"
      },
      "status": "in-progress",
      "location": {
        "reference": "Location/17e7750e68f-6266aec8-0cd3-443e-adb9-be37f3bf25f2",
        "display": "HOLYOKE MEDICAL CENTER"
      }
    }
  },
  {
    "detail": {
      "code": {
        "coding": [
          {
            "system": "http://snomed.info/sct",
            "code": "58332002",
            "display": "Allergy education"
          }
        ],
        "text": "Allergy education"
      },
      "status": "in-progress",
      "location": {
        "reference": "Location/17e7750e68f-6266aec8-0cd3-443e-adb9-be37f3bf25f2",
        "display": "HOLYOKE MEDICAL CENTER"
      }
    }
  },
  {
    "detail": {
      "code": {
        "coding": [
          {
            "system": "http://snomed.info/sct",
            "code": "58332002",
            "display": "Allergy education"
          }
        ],
        "text": "Allergy education"
      },
      "status": "in-progress",
      "location": {
        "reference": "Location/17e7750e68f-6266aec8-0cd3-443e-adb9-be37f3bf25f2",
        "display": "HOLYOKE MEDICAL CENTER"
      }
    }
  }
]
```



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```
}  
}  
]  
,  
"search": {  
  "mode": "match",  
  "score": 1  
}  
}  
]  
}
```



## Request : CareTeam

GET [Base\_URL]/CareTeam?patient=[id]&status=active

e.g.

https://[Base\_URL]/CareTeam?patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b&status=active

Response

Each resource returned from the first search is expected to conform to the [US Core CareTeam Profile](#)

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "492509fd-0650-4e2e-834f-41fc7b132a5e",
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/CareTeam?_count=10&patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b&status=http://hl7.org/fhir/care-team-status%7Cactive&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e775e7546-36e6a4cd-264e-4a94-92fa-cdf1b2fa30c1",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/CareTeam/17e775e7546-36e6a4cd-264e-4a94-92fa-cdf1b2fa30c1",
      "resource": {
        "resourceType": "CareTeam",
        "id": "17e775e7546-36e6a4cd-264e-4a94-92fa-cdf1b2fa30c1",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2022-01-20T12:03:06.182Z",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-careteam"
          ]
        },
        "status": "active",
        "subject": {
          "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
        },
        "encounter": {
          "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
        },
        "period": {
          "start": "1941-10-02T18:33:18-05:00"
        },
        "participant": [
          {
            "role": [
              {
                "coding": [
                  {
                    "system": "http://snomed.info/sct",
                    "code": "116154003",
                    "display": "Patient"
                  }
                ],
                "text": "Patient"
              }
            ],
            "member": {
              "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b",
              "display": "Mr. Dustin31 Ritchie586"
            }
          }
        ]
      }
    }
  ]
}
```



```
},
{
  "role": [
    {
      "coding": [
        {
          "system": "http://snomed.info/sct",
          "code": "223366009",
          "display": "Healthcare professional (occupation)"
        }
      ],
      "text": "Healthcare professional (occupation)"
    }
  ],
  "member": {
    "reference": "Practitioner/17e774bb850-6b7b7f50-ed52-4523-a3a8-60fb0ef71c5b",
    "display": "Dr. Patricia625 Kilback373"
  }
},
{
  "role": [
    {
      "coding": [
        {
          "system": "http://snomed.info/sct",
          "code": "224891009",
          "display": "Healthcare services (qualifier value)"
        }
      ],
      "text": "Healthcare services (qualifier value)"
    }
  ],
  "member": {
    "reference": "Organization/17e774dca91-e7e4e9e3-390e-4c10-83ae-88beabc176e2",
    "display": "HOLYOKE MEDICAL CENTER"
  }
},
"managingOrganization": [
  {
    "reference": "Organization/17e774dca91-e7e4e9e3-390e-4c10-83ae-88beabc176e2",
    "display": "HOLYOKE MEDICAL CENTER"
  }
],
"search": {
  "mode": "match",
  "score": 1
}
}
```



## Request: Problems / Health Concern

### Search Parameters

```
GET [base]/Condition?patient=[id]&category={system}[code]
GET [base]/Condition?patient=[id]&category=http://terminology.hl7.org/CodeSystem/condition-category|problem-list-item
GET [base]/Condition?patient=[id]&category=http://hl7.org/fhir/us/core/CodeSystem/condition-category|health-concern
GET [base]/Condition?patient=[id]&category=http://terminology.hl7.org/CodeSystem/condition-category|encounter-diagnosis
e.g
[Base_URL]/Condition?patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b&category=http://hl7.org/fhir/us/core/CodeSystem/condition-
category|health-concern
```

### Response

Each resource returned from the first search is expected to conform to the US Core [Condition](#) Profile

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "f537c30e-fab7-45f0-8167-4ab7a48386ec",
  "type": "searchset",
  "total": 2,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Condition?_count=10&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e7777ce8c-c66752fb-ee1b-40c2-ba5a-2e6ee89b3e1a",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Condition/17e7777ce8c-c66752fb-ee1b-40c2-ba5a-2e6ee89b3e1a",
      "resource": {
        "resourceType": "Condition",
        "id": "17e7777ce8c-c66752fb-ee1b-40c2-ba5a-2e6ee89b3e1a",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2022-01-20T12:30:47.436Z",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-condition"
          ]
        },
        "clinicalStatus": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/condition-clinical",
              "code": "resolved"
            }
          ]
        },
        "verificationStatus": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/condition-ver-status",
              "code": "confirmed"
            }
          ]
        },
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/condition-category",
                "code": "encounter-diagnosis",
                "display": "Encounter Diagnosis"
              }
            ]
          }
        ]
      }
    }
  ]
}
```



```
}
],
"code": {
  "coding": [
    {
      "system": "http://snomed.info/sct",
      "code": "444814009",
      "display": "Viral sinusitis (disorder)"
    }
  ],
  "text": "Viral sinusitis (disorder)"
},
"subject": {
  "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b"
},
"encounter": {
  "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
},
"onsetDateTime": "1940-11-09T18:33:18-05:00",
"abatementDateTime": "1940-11-30T18:33:18-05:00",
"recordedDate": "1940-11-09T18:33:18-05:00"
},
"search": {
  "mode": "match",
  "score": 1
}
},
{
  "id": "17eb029f925-40603327-0ac3-48dd-972b-6c882b8751f5",
  "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Condition/17eb029f925-40603327-0ac3-48dd-972b-6c882b8751f5",
  "resource": {
    "resourceType": "Condition",
    "id": "17eb029f925-40603327-0ac3-48dd-972b-6c882b8751f5",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2022-01-31T12:44:07.847Z",
      "profile": [
        "http://hl7.org/fhir/us/core/StructureDefinition/us-core-condition"
      ]
    },
    "clinicalStatus": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/condition-clinical",
          "code": "resolved"
        }
      ]
    },
    "verificationStatus": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/condition-ver-status",
          "code": "confirmed"
        }
      ]
    },
    "category": [
      {
        "extension": [
          {
            "url": "http://hl7.org/fhir/StructureDefinition/data-absent-reason",
            "valueCode": "unknown"
          }
        ]
      }
    ],
    "code": {
      "coding": [
```



```
{
  "system": "http://snomed.info/sct",
  "code": "195662009",
  "display": "Acute viral pharyngitis (disorder)"
}
],
"text": "Acute viral pharyngitis (disorder)"
},
"subject": {
  "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
},
"encounter": {
  "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
},
"onsetDateTime": "1961-06-25T01:11:45-04:00",
"abatementDateTime": "1961-07-07T01:11:45-04:00",
"recordedDate": "1961-06-25T01:11:45-04:00"
},
"search": {
  "mode": "match",
  "score": 1
}
}
}
```



## Request: Implantable Device

Search Parameters

GET [Base\_URL]/Device?patient=[id]

e.g. [Base\_URL]/Device?patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b

Response

Each resource returned from the first search is expected to conform to the US Core [ImplantableDevice](#) Profile

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "5804551e-120d-4164-b05b-9705fad44fa5",
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Device?_count=10&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e777b3f34-04bc3627-92d3-43bb-92e7-35533110f750",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Device/17e777b3f34-04bc3627-92d3-43bb-92e7-35533110f750",
      "resource": {
        "resourceType": "Device",
        "id": "17e777b3f34-04bc3627-92d3-43bb-92e7-35533110f750",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2022-01-20T12:34:32.884Z",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-implantable-device"
          ]
        },
        "udiCarrier": [
          {
            "deviceIdentifier": "43069338026389",
            "carrierHRF": "(01)43069338026389(11)000302(17)250317(10)1134(21)842026117977"
          }
        ],
        "status": "active",
        "distinctIdentifier": "43069338026389",
        "manufactureDate": "2000-03-02T18:33:18-05:00",
        "expirationDate": "2025-03-17T19:33:18-04:00",
        "lotNumber": "1134",
        "serialNumber": "842026117977",
        "deviceName": [
          {
            "name": "Implantable defibrillator, device (physical object)",
            "type": "user-friendly-name"
          }
        ],
        "type": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "72506001",
              "display": "Implantable defibrillator, device (physical object)"
            }
          ]
        },
        "text": "Implantable defibrillator, device (physical object)"
      },
      "patient": {
        "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b"
      }
    }
  ]
}
```



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```
}  
},  
"search": {  
  "mode": "match",  
  "score": 1  
}  
}  
]  
}
```



## Request: Diagnostic Report/ Clinical Notes/ DocumentReference

### Search Parameters

patient : GET [Base\_URL]/DiagnosticReport?patient=[id]  
patient + code : GET [Base\_URL]/DiagnosticReport?patient=[id]&code={system }[code]  
patient + category: GET [Base\_URL]/DiagnosticReport?patient=[id]&category=LAB  
patient : GET [Base\_URL]/ DocumentReference?patient=[id]

e.g.

[https://\[Base\\_URL\]/DiagnosticReport?category=LP29684-5&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b](https://[Base_URL]/DiagnosticReport?category=LP29684-5&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b)  
[https://\[Base\\_URL\]/DiagnosticReport?category=LP7839-6&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b](https://[Base_URL]/DiagnosticReport?category=LP7839-6&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b)  
[https://\[Base\\_URL\]/DiagnosticReport?category=LP29708-2&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b](https://[Base_URL]/DiagnosticReport?category=LP29708-2&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b)  
[https://\[Base\\_URL\]/DocumentReference?patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b](https://[Base_URL]/DocumentReference?patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b)

Category and codes details can be obtained from [US Core DiagnosticReport Profile for Report and Note exchange](#)

### Response

Each resource returned from the first search is expected to conform to the [US Core DiagnosticReport Profile for Report and Note exchange](#).

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "a87a8318-2dfc-488d-9f0a-6b07d7c29271",
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/DiagnosticReport?_count=10&category=LP29684-5&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e7b6e6f1c-119e9b8b-11b9-448b-b760-dc116013b654",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/DiagnosticReport/17e7b6e6f1c-119e9b8b-11b9-448b-b760-dc116013b654",
      "resource": {
        "resourceType": "DiagnosticReport",
        "id": "17e7b6e6f1c-119e9b8b-11b9-448b-b760-dc116013b654",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2022-01-21T06:59:02.053Z",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-note"
          ]
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://loinc.org",
                "code": "LP29684-5",
                "display": "Radiology"
              }
            ],
            "text": "Radiology"
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "34117-2",
              "display": "History and physical note"
            }
          ]
        }
      }
    }
  ]
}
```





## Request: Laboratory Result Observation

### Search Parameters

patient : GET [Base\_URL]/DiagnosticReport?patient=[id]  
patient + code : GET [Base\_URL]/DiagnosticReport?patient=[id]&code={system }[code]  
patient + category: GET [Base\_URL]/DiagnosticReport?patient=[id]&category=LAB  
e.g.

https://[Base\_URL]/DiagnosticReport?category=http://terminology.hl7.org/CodeSystem/v2-0074%7CLAB&patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b  
https://[Base\_URL]/DiagnosticReport?category=LAB&patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b  
https://[Base\_URL]/DiagnosticReport?category=LAB&patient=Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b

Category and codes details can be obtained from [US Core DiagnosticReport Profile for Laboratory Results Reporting](#).

### Response

Each resource returned from the first search is expected to conform to the [US Core DiagnosticReport Profile for Laboratory Results Reporting](#)

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "019290b1-c4e1-4025-862c-60ffc3a6160b",
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/DiagnosticReport?_count=10&category=http://terminology.hl7.org/CodeSystem/v2-0074%7CLAB&patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e7b7b7e66-36f4cf84-3482-4e36-8cca-13cc832b3bed",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/DiagnosticReport/17e7b7b7e66-36f4cf84-3482-4e36-8cca-13cc832b3bed",
      "resource": {
        "resourceType": "DiagnosticReport",
        "id": "17e7b7b7e66-36f4cf84-3482-4e36-8cca-13cc832b3bed",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2022-01-21T07:13:17.926Z",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-diagnosticreport-lab"
          ]
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/v2-0074",
                "code": "LAB",
                "display": "Laboratory"
              }
            ]
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "51990-0",
              "display": "Basic Metabolic Panel"
            }
          ]
        },
        "text": "Basic Metabolic Panel"
      }
    }
  ]
}
```



```
},
"subject": {
  "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
},
"encounter": {
  "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
},
"effectiveDateTime": "2017-09-28T19:33:18-04:00",
"issued": "2017-09-28T19:33:18.715-04:00",
"performer": [
  {
    "reference": "Organization/17e774dca91-e7e4e9e3-390e-4c10-83ae-88beabc176e2",
    "display": "PCP170967"
  },
  {
    "reference": "Practitioner/17e774bb850-6b7b7f50-ed52-4523-a3a8-60fb0ef71c5b"
  },
  {
    "reference": "Organization/17e774dca91-e7e4e9e3-390e-4c10-83ae-88beabc176e2"
  }
],
"result": [
  {
    "reference": "Observation/17e77809e90-d5cfd26d-ab5d-4f36-bc32-1ee799b2c278",
    "display": "Glucose"
  },
  {
    "reference": "Observation/17e7785ea69-6c9f88d9-0553-4216-be17-f908ebe0b371",
    "display": "Urea Nitrogen"
  }
]
},
"search": {
  "mode": "match",
  "score": 1
}
}
```



## Request: GOAL

GET https://[Base\_URL]/Goal?patient=[id]

e.g. https://[Base\_URL]/Goal?patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b

Response

Each resource returned from the first search is expected to conform to the [US Core Goal Profile](#)

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "6f2db230-b4f4-4447-856b-3f398377a95f",
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Goal?_count=10&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e7b8b62f8-a4f77df6-b97e-4ece-82ff-36480c9cc38c",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Goal/17e7b8b62f8-a4f77df6-b97e-4ece-82ff-36480c9cc38c",
      "resource": {
        "resourceType": "Goal",
        "id": "17e7b8b62f8-a4f77df6-b97e-4ece-82ff-36480c9cc38c",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2022-01-21T07:30:39.48Z",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-goal"
          ]
        },
        "lifecycleStatus": "active",
        "description": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "281004",
              "display": "Alcoholic dementia"
            }
          ],
          "text": "Alcoholic dementia"
        },
        "subject": {
          "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b"
        },
        "target": [
          {
            "dueDate": "2020-12-07"
          }
        ]
      },
      "search": {
        "mode": "match",
        "score": 1
      }
    }
  ]
}
```



## Request: Immunization

GET https://[Base\_URL]/Immunization?patient=[id]

e.g. https://[Base\_URL]/Immunization?patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b

Response

Each resource returned from the first search is expected to conform to the US Core [Immunization](#) Profile

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "206f31dc-9636-4e6f-a652-40c307eebe40",
  "type": "searchset",
  "total": 2,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Immunization?_count=10&patient=Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e7b8dc9ab-8abc85e3-0ab1-470f-ae8-1f4e9a3597bb",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Immunization/17e7b8dc9ab-8abc85e3-0ab1-470f-ae8-1f4e9a3597bb",
      "resource": {
        "resourceType": "Immunization",
        "id": "17e7b8dc9ab-8abc85e3-0ab1-470f-ae8-1f4e9a3597bb",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2022-01-21T07:33:16.843Z",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-immunization"
          ]
        },
        "status": "not-done",
        "statusReason": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/v3-ActReason",
              "code": "OSTOCK",
              "display": "product out of stock"
            }
          ],
          "text": "product out of stock"
        },
        "vaccineCode": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/data-absent-reason",
              "code": "unknown",
              "display": "Unknown"
            }
          ],
          "text": "Unknown"
        },
        "patient": {
          "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
        },
        "encounter": {
          "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
        },
        "occurrenceString": "1946-08-29T19:33:18-04:00",
        "primarySource": true,
        "location": {
          "reference": "Location/17e7750e68f-6266aec8-0cd3-443e-adb9-be37f3bf25f2",
          "display": "RIVER BEND MEDICAL GROUP - CHICOPEE OFFICE - URGENT CARE"
        }
      }
    }
  ]
}
```



```
},
"search": {
  "mode": "match",
  "score": 1
}
},
{
  "id": "17eb02c0f47-3b8a6c05-ae47-4002-9001-fd61626bfca5",
  "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Immunization/17eb02c0f47-3b8a6c05-ae47-4002-9001-fd61626bfca5",
  "resource": {
    "resourceType": "Immunization",
    "id": "17eb02c0f47-3b8a6c05-ae47-4002-9001-fd61626bfca5",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2022-01-31T12:46:24.583Z",
      "profile": [
        "http://hl7.org/fhir/us/core/StructureDefinition/us-core-immunization"
      ]
    },
    "status": "not-done",
    "statusReason": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/v3-ActReason",
          "code": "OSTOCK",
          "display": "product out of stock"
        }
      ],
      "text": "product out of stock"
    },
    "vaccineCode": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/data-absent-reason",
          "code": "unknown",
          "display": "Unknown"
        }
      ],
      "text": "Unknown"
    },
    "patient": {
      "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b"
    },
    "encounter": {
      "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
    },
    "occurrenceString": "1946-08-29T19:33:18-04:00",
    "primarySource": true,
    "location": {
      "reference": "Location/17e7750e68f-6266aec8-0cd3-443e-adb9-be37f3bf25f2",
      "display": "RIVER BEND MEDICAL GROUP - CHICOPEE OFFICE - URGENT CARE"
    }
  },
  "search": {
    "mode": "match",
    "score": 1
  }
}
}
```



## Request: Medication

GET [https://\[Base\\_URL\]/MedicationRequest?patient=\[id\]](https://[Base_URL]/MedicationRequest?patient=[id])

e.g. [https://\[Base\\_URL\]/MedicationRequest?patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b&intent=order&status=active](https://[Base_URL]/MedicationRequest?patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b&intent=order&status=active)  
Response

Each resource returned from the first search is expected to conform to the US Core [Medication](#) Profile, US Core [MedicationRequest](#) Profile  
Code: 200 (Success)

```
{
  "resourceType": "MedicationRequest",
  "id": "17e7b9b263e-9cd8f64f-f7e1-447e-8583-a753342d13c6",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2022-01-21T07:47:52.51Z",
    "profile": [
      "http://hl7.org/fhir/us/core/StructureDefinition/us-core-medicationrequest"
    ]
  },
  "status": "stopped",
  "intent": "plan",
  "reportedBoolean": true,
  "medicationCodeableConcept": {
    "coding": [
      {
        "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
        "code": "2123111",
        "display": "NDA020503 200 ACTUAT Albuterol 0.09 MG/ACTUAT Metered Dose Inhaler"
      }
    ],
    "text": "NDA020503 200 ACTUAT Albuterol 0.09 MG/ACTUAT Metered Dose Inhaler"
  },
  "subject": {
    "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
  },
  "authoredOn": "2020-08-13T19:33:18-04:00",
  "requester": {
    "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
  },
  "reasonReference": [
    {
      "reference": "Condition/17e7777ce8c-c66752fb-ee1b-40c2-ba5a-2e6ee89b3e1a"
    }
  ],
  "dosageInstruction": [
    {
      "sequence": 1,
      "text": "Take as needed.",
      "asNeededBoolean": true
    }
  ]
}
```

## Request: Smoking Status

GET [https://\[Base\\_URL\]/Observation?code=72166-2&patient=\[id\]](https://[Base_URL]/Observation?code=72166-2&patient=[id])

e.g. [https://\[Base\\_URL\]/Observation?code=72166-2&patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b](https://[Base_URL]/Observation?code=72166-2&patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b)

Response

Each resource returned from the first search is expected to conform to the US Core [Smoking Status Observation](#) Profile  
Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "2ea85043-b450-40f1-8d2d-751af1c10abb",
  "type": "searchset",
```



```
"total": 2,
"link": [
  {
    "relation": "self",
    "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation?_count=10&code=72166-2&patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b&_page=1"
  }
],
"entry": [
  {
    "id": "17e77809e90-d5cfd26d-ab5d-4f36-bc32-1ee799b2c278",
    "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation/17e77809e90-d5cfd26d-ab5d-4f36-bc32-1ee799b2c278",
    "resource": {
      "resourceType": "Observation",
      "id": "17e77809e90-d5cfd26d-ab5d-4f36-bc32-1ee799b2c278",
      "meta": {
        "versionId": "1",
        "lastUpdated": "2022-01-20T12:40:24.976Z",
        "profile": [
          "http://hl7.org/fhir/us/core/StructureDefinition/us-core-smokingstatus"
        ]
      },
      "status": "final",
      "category": [
        {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/observation-category",
              "code": "survey",
              "display": "survey"
            }
          ]
        }
      ],
      "code": {
        "coding": [
          {
            "system": "http://loinc.org",
            "code": "72166-2",
            "display": "Tobacco smoking status NHIS"
          }
        ],
        "text": "Tobacco smoking status NHIS"
      },
      "subject": {
        "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
      },
      "encounter": {
        "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
      },
      "effectivePeriod": {
        "start": "1940-09-05T19:33:18-04:00",
        "end": "1940-09-05T20:33:18-04:00"
      },
      "issued": "1940-09-05T19:33:18.715-04:00",
      "valueCodeableConcept": {
        "coding": [
          {
            "system": "http://snomed.info/sct",
            "code": "266919005",
            "display": "Never smoker"
          }
        ],
        "text": "Never smoker"
      }
    }
  },
  {
    "search": {
      "mode": "match",

```



```
"score": 1
}
},
{
  "id": "17e7785ea69-6c9f88d9-0553-4216-be17-f908ebe0b371",
  "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation/17e7785ea69-6c9f88d9-0553-4216-be17-f908ebe0b371",
  "resource": {
    "resourceType": "Observation",
    "id": "17e7785ea69-6c9f88d9-0553-4216-be17-f908ebe0b371",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2022-01-20T12:46:12.073Z",
      "profile": [
        "http://hl7.org/fhir/us/core/StructureDefinition/us-core-smokingstatus"
      ]
    },
    "status": "final",
    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "survey",
            "display": "survey"
          }
        ]
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "72166-2",
          "display": "Tobacco smoking status NHIS"
        }
      ],
      "text": "Tobacco smoking status NHIS"
    },
    "subject": {
      "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfdb2be4b"
    },
    "encounter": {
      "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
    },
    "effectivePeriod": {
      "start": "1940-09-05T19:33:18-04:00",
      "end": "1940-09-05T20:33:18-04:00"
    },
    "issued": "1940-09-05T19:33:18.715-04:00",
    "valueCodeableConcept": {
      "coding": [
        {
          "system": "http://snomed.info/sct",
          "code": "266919005",
          "display": "Never smoker"
        }
      ],
      "text": "Never smoker"
    }
  },
  "search": {
    "mode": "match",
    "score": 1
  }
}
]
}
```



## Request: Procedure

GET https://[Base\_URL]/Procedure?patient=[id]

e.g. https://[Base\_URL]/Procedure?patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b

### Response

Each resource returned from the first search is expected to conform to the US Core [Procedure](#) Profile

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "ed4425dd-7479-4b52-b404-502697281ee0",
  "type": "searchset",
  "total": 1,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Procedure?_count=10&patient=17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e7ba24dee-bf67ef6b-6419-4c7c-b905-a107b26bf8fb",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Procedure/17e7ba24dee-bf67ef6b-6419-4c7c-b905-a107b26bf8fb",
      "resource": {
        "resourceType": "Procedure",
        "id": "17e7ba24dee-bf67ef6b-6419-4c7c-b905-a107b26bf8fb",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2022-01-21T07:55:41.422Z",
          "profile": [
            "http://hl7.org/fhir/us/core/StructureDefinition/us-core-procedure"
          ]
        },
        "status": "completed",
        "code": {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "430193006",
              "display": "Medication Reconciliation (procedure)"
            }
          ]
        },
        "text": "Medication Reconciliation (procedure)"
      },
      "subject": {
        "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
      },
      "encounter": {
        "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
      },
      "performedDateTime": "1941-02-13T18:33:18-05:00",
      "location": {
        "reference": "Location/17e7750e68f-6266aec8-0cd3-443e-adb9-be37f3bf25f2",
        "display": "PCP170967"
      }
    },
    {
      "search": {
        "mode": "match",
        "score": 1
      }
    }
  ]
}
```



## Request: Provenance

GET [https://\[Base\\_URL\]/Provenance/\[id\]](https://[Base_URL]/Provenance/[id])

e.g.

[https://\[Base\\_URL\]/Provenance/17e8adbbd12-21675728-3f52-4320-8b3b-d5977915336c](https://[Base_URL]/Provenance/17e8adbbd12-21675728-3f52-4320-8b3b-d5977915336c)

Response

Each resource returned from the first search is expected to conform to the US Core [Provenance](#) Profile

Code: 200 (Success)

```
{
  "resourceType": "Provenance",
  "id": "17e8adbbd12-21675728-3f52-4320-8b3b-d5977915336c",
  "meta": {
    "versionId": "5",
    "lastUpdated": "2022-01-31T12:51:12.934Z",
    "profile": [
      "http://hl7.org/fhir/us/core/StructureDefinition/us-core-provenance"
    ]
  },
  "target": [
    {
      "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
    },
    {
      "reference": "Location/17e7750e68f-6266aec8-0cd3-443e-adb9-be37f3bf25f2"
    },
    {
      "reference": "Organization/17e774dca91-e7e4e9e3-390e-4c10-83ae-88beabc176e2"
    },
    {
      "reference": "Practitioner/17e774bb850-6b7b7f50-ed52-4523-a3a8-60fb0ef71c5b"
    },
    {
      "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
    },
    {
      "reference": "AllergyIntolerance/17e7758c319-7955ecfe-94da-4071-8488-4ef21425ed85"
    },
    {
      "reference": "CareTeam/17e775e7546-36e6a4cd-264e-4a94-92fa-cdf1b2fa30c1"
    },
    {
      "reference": "CarePlan/17e776e13ff-1ea7505d-f475-4f49-adde-30e69df86734"
    },
    {
      "reference": "Condition/17e7777ce8c-c66752fb-ee1b-40c2-ba5a-2e6ee89b3e1a"
    },
    {
      "reference": "Condition/17eb029f925-40603327-0ac3-48dd-972b-6c882b8751f5"
    },
    {
      "reference": "Device/17e777b3f34-04bc3627-92d3-43bb-92e7-35533110f750"
    },
    {
      "reference": "Observation/17e77809e90-d5cfd26d-ab5d-4f36-bc32-1ee799b2c278"
    },
    {
      "reference": "Observation/17e7785ea69-6c9f88d9-0553-4216-be17-f908ebe0b371"
    },
    {
      "reference": "Observation/17e778a9113-66c19e50-1b3f-41fd-a4da-ef86393fb0b2"
    },
    {
      "reference": "Observation/17e778d42db-92528d6f-7103-40fb-99ca-b2ac8837210d"
    },
    {
      "reference": "Observation/17e7791dd19-11eaf5c1-a5c0-429c-9867-f3110c743572"
    }
  ]
}
```



```
,
{
  "reference": "Observation/17e77947034-7677a2e6-33af-4e06-83ae-a6727ac79885"
},
{
  "reference": "Observation/17e7797685b-e707227d-0cb5-4b28-bab2-ca1f4a1ba111"
},
{
  "reference": "Observation/17e7799a564-8f9ed437-d396-46bf-8f68-bf728955654c"
},
{
  "reference": "Observation/17e779bc672-37c76705-1f73-4531-bfcb-ee3cd3e25bfd"
},
{
  "reference": "Observation/17e77a065f3-77947ea0-1b53-47a5-9a9e-10f6e169f292"
},
{
  "reference": "Observation/17e77a29d41-85ec6814-a99a-4a73-ae02-f6a494a11468"
},
{
  "reference": "Observation/17e77a53c30-b356fe0d-d90b-42ed-91f9-5ed08c8047ca"
},
{
  "reference": "Observation/17e7c606d8a-9aeab44c-0261-465d-8930-4a218b201bf5"
},
{
  "reference": "DiagnosticReport/17e7b6e6f1c-119e9b8b-11b9-448b-b760-dc116013b654"
},
{
  "reference": "DiagnosticReport/17e7b741f29-4b6b813d-d11e-4597-8178-5bc5996ac4e4"
},
{
  "reference": "DiagnosticReport/17e7b7b7e66-36f4cf84-3482-4e36-8cca-13cc832b3bed"
},
{
  "reference": "DiagnosticReport/17e7d0e6d1d-c0e0136b-81d4-4164-a8b8-863694276a4f"
},
{
  "reference": "DocumentReference/17e7b838c61-4be99b80-0f94-4b26-a086-a30ed78c91ce"
},
{
  "reference": "DocumentReference/17e7d144d28-7d79ed3e-ca9e-400d-a9ed-add23f5cef07"
},
{
  "reference": "DocumentReference/17e7d19866c-dbbaa2e9-4d81-44bb-af5d-ec2e829e9c72"
},
{
  "reference": "DocumentReference/17e7d1c49cd-bfb30b25-9f98-40c7-9d94-977b7b803f21"
},
{
  "reference": "DocumentReference/17e7d24c947-205cd8e5-3a93-4ab9-8662-5e92b0080af7"
},
{
  "reference": "Goal/17e7b8b62f8-a4f77df6-b97e-4ece-82ff-36480c9cc38c"
},
{
  "reference": "Immunization/17e7b8dc9ab-8abc85e3-0ab1-470f-ae8-1f4e9a3597bb"
},
{
  "reference": "Immunization/17eb02c0f47-3b8a6c05-ae47-4002-9001-fd61626bfa5"
},
{
  "reference": "Medication/17e7b8f47d0-2bf2943a-123e-4725-b5dd-f5200df6c3a2"
},
{
  "reference": "MedicationRequest/17e7b94dd8d-d3b0e43a-de55-4822-8bb5-07e5fd6177d9"
},
{
```



```
"reference": "MedicationRequest/17e7b990c43-4525f6a4-81a0-40f7-97c7-7dbebff6e34b"
},
{
  "reference": "MedicationRequest/17e7b9b263e-9cd8f64f-f7e1-447e-8583-a753342d13c6"
},
{
  "reference": "MedicationRequest/17e7ba05cb1-0a5defbd-deb9-4792-9952-8f7f0e5bc74b"
},
{
  "reference": "Procedure/17e7ba24dee-bf67ef6b-6419-4c7c-b905-a107b26bf8fb"
},
{
  "reference": "Observation/17e81e97c4b-ea761488-0b67-43d0-a0d7-346dea549bee"
},
{
  "reference": "Observation/17e81ebac04-75d9f0f2-fcb2-4e2f-9c22-87fb7ddf5f5e"
},
{
  "reference": "Observation/17e81ed9c56-bcda0427-df92-4b58-b3ae-ac11c22f4d7d"
},
{
  "reference": "Observation/17e81ef5b5e-40df3e7d-19bc-4c2a-94bc-9a04ff93537c"
},
{
  "reference": "Observation/17e81f0fd34-6fc95b32-8346-4aec-9de3-072d12c992a5"
},
{
  "reference": "Observation/17e81f291e7-c99c91ac-57dd-47f6-b7f7-a365d2c087d7"
},
{
  "reference": "Observation/17e81f4a61d-ff3926f2-e35b-466a-bb6c-62a061425258"
},
{
  "reference": "Observation/17e8501692e-8c2d145f-fb69-4ae3-85d1-ef31ebf4a6a2"
},
{
  "reference": "Observation/17e8502f180-3c7e4770-3630-4654-922a-3f802c2939b1"
}
],
"recorded": "2020-12-10T18:33:18.715-05:00",
"agent": [
  {
    "type": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/provenance-participant-type",
          "code": "author",
          "display": "Author"
        }
      ],
      "text": "Author"
    },
    "who": {
      "reference": "Practitioner/17e774bb850-6b7b7f50-ed52-4523-a3a8-60fb0ef71c5b",
      "display": "Dr. Blossom971 Christiansen251"
    },
    "onBehalfOf": {
      "reference": "Organization/17e774dca91-e7e4e9e3-390e-4c10-83ae-88beabc176e2",
      "display": "PCP170967"
    }
  },
  {
    "type": {
      "coding": [
        {
          "system": "http://hl7.org/fhir/us/core/CodeSystem/us-core-provenance-participant-type",
          "code": "transmitter",
          "display": "Transmitter"
        }
      ]
    }
  }
]
```



MDofficeManager

[www.MDofficeManager.com](http://www.MDofficeManager.com)

```
}  
],  
"text": "Transmitter"  
},  
"who": {  
  "reference": "Practitioner/17e774bb850-6b7b7f50-ed52-4523-a3a8-60fb0ef71c5b",  
  "display": "Dr. Blossom971 Christiansen251"  
},  
"onBehalfOf": {  
  "reference": "Organization/17e774dca91-e7e4e9e3-390e-4c10-83ae-88beabc176e2",  
  "display": "PCP170967"  
}  
}  
]  
}
```



## Request: Vital Signs

patient + code: GET [https://\[Base\\_URL\]/Observation?code=85354-9&patient=\[id\]](https://[Base_URL]/Observation?code=85354-9&patient=[id])

patient + category + date : GET [https://\[Base\\_URL\]/Observation?category=vital-signs&date=\[leYYYY-MM-DD\]&patient=\[id\]](https://[Base_URL]/Observation?category=vital-signs&date=[leYYYY-MM-DD]&patient=[id])

e.g.  
[https://\[Base\\_URL\]/Observation?code=85354-9&patient=Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfdb2be4b](https://[Base_URL]/Observation?code=85354-9&patient=Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfdb2be4b)

[https://\[Base\\_URL\]/Observation?code=85354-9&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfdb2be4b](https://[Base_URL]/Observation?code=85354-9&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfdb2be4b)

[https://\[Base\\_URL\]/Observation?category=vital-signs&date=gt1994-05-18T19:33:18-04:00&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfdb2be4b](https://[Base_URL]/Observation?category=vital-signs&date=gt1994-05-18T19:33:18-04:00&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfdb2be4b)

## Response

Each resource returned from the first search is expected to conform to the FHIR Core [VitalSigns](#) Profile

Code: 200 (Success)

```
{
  "resourceType": "Bundle",
  "id": "231df7ad-8e46-4371-99cc-4ce0dc9c5cb0",
  "type": "searchset",
  "total": 6,
  "link": [
    {
      "relation": "self",
      "url": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation?_count=10&category=vital-signs&date=gt1994-05-18T19:33:18-04:00&patient=17e77411359-8837d878-ea1e-45b5-bb89-882dfdb2be4b&_page=1"
    }
  ],
  "entry": [
    {
      "id": "17e7797685b-e707227d-0cb5-4b28-bab2-ca1f4a1ba111",
      "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation/17e7797685b-e707227d-0cb5-4b28-bab2-ca1f4a1ba111",
      "resource": {
        "resourceType": "Observation",
        "id": "17e7797685b-e707227d-0cb5-4b28-bab2-ca1f4a1ba111",
        "meta": {
          "versionId": "1",
          "lastUpdated": "2022-01-20T13:05:18.427Z",
          "profile": [
            "http://hl7.org/fhir/StructureDefinition/bodytemp",
            "http://hl7.org/fhir/StructureDefinition/vitalsigns"
          ]
        },
        "status": "final",
        "category": [
          {
            "coding": [
              {
                "system": "http://terminology.hl7.org/CodeSystem/observation-category",
                "code": "vital-signs",
                "display": "vital-signs"
              }
            ]
          }
        ],
        "code": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "8310-5",
              "display": "Body temperature"
            },
            {
              "system": "http://loinc.org",
              "code": "8331-1",
              "display": "Oral temperature"
            }
          ]
        },
        "text": "Body temperature"
      }
    }
  ],
}
```



```
"subject": {
  "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
},
"encounter": {
  "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
},
"effectiveDateTime": "2009-08-19T19:33:18-04:00",
"issued": "2009-08-19T19:33:18.715-04:00",
"valueQuantity": {
  "value": 37.799,
  "unit": "Cel",
  "system": "http://unitsofmeasure.org",
  "code": "Cel"
}
},
"search": {
  "mode": "match",
  "score": 1
}
},
{
  "id": "17e7799a564-8f9ed437-d396-46bf-8f68-bf728955654c",
  "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation/17e7799a564-8f9ed437-d396-46bf-8f68-bf728955654c",
  "resource": {
    "resourceType": "Observation",
    "id": "17e7799a564-8f9ed437-d396-46bf-8f68-bf728955654c",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2022-01-20T13:07:45.124Z",
      "profile": [
        "http://hl7.org/fhir/StructureDefinition/bp",
        "http://hl7.org/fhir/StructureDefinition/vitalsigns"
      ]
    },
    "status": "final",
    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "vital-signs",
            "display": "vital-signs"
          }
        ]
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "85354-9",
          "display": "Blood Pressure"
        }
      ],
      "text": "Blood Pressure"
    },
    "subject": {
      "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
    },
    "encounter": {
      "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
    },
    "effectiveDateTime": "1994-05-19T19:33:18-04:00",
    "issued": "1994-05-19T19:33:18.715-04:00",
    "component": [
      {
        "code": {
          "coding": [
```



```
{
  "system": "http://loinc.org",
  "code": "8462-4",
  "display": "Diastolic Blood Pressure"
},
{
  "text": "Diastolic Blood Pressure"
},
{
  "valueQuantity": {
    "value": 85,
    "unit": "mm[Hg]",
    "system": "http://unitsofmeasure.org",
    "code": "mm[Hg]"
  }
},
{
  "code": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "8480-6",
        "display": "Systolic Blood Pressure"
      }
    ],
    "text": "Systolic Blood Pressure"
  },
  "valueQuantity": {
    "value": 129,
    "unit": "mm[Hg]",
    "system": "http://unitsofmeasure.org",
    "code": "mm[Hg]"
  }
}
],
"search": {
  "mode": "match",
  "score": 1
}
},
{
  "id": "17e77a29d41-85ec6814-a99a-4a73-ae02-f6a494a11468",
  "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation/17e77a29d41-85ec6814-a99a-4a73-ae02-f6a494a11468",
  "resource": {
    "resourceType": "Observation",
    "id": "17e77a29d41-85ec6814-a99a-4a73-ae02-f6a494a11468",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2022-01-20T13:17:32.865Z",
      "profile": [
        "http://hl7.org/fhir/StructureDefinition/hearttrate",
        "http://hl7.org/fhir/StructureDefinition/vitalsigns"
      ]
    },
    "status": "final",
    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "vital-signs",
            "display": "vital-signs"
          }
        ]
      }
    ]
  }
},
{
  "code": {
    "coding": [
```



```
{
  "system": "http://loinc.org",
  "code": "8867-4",
  "display": "Heart rate"
},
"text": "Heart rate"
},
"subject": {
  "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b"
},
"encounter": {
  "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
},
"effectiveDateTime": "2003-07-10T19:33:18-04:00",
"issued": "2003-07-10T19:33:18.715-04:00",
"valueQuantity": {
  "value": 65,
  "unit": "/min",
  "system": "http://unitsofmeasure.org",
  "code": "/min"
},
"search": {
  "mode": "match",
  "score": 1
},
{
  "id": "17e81ef5b5e-40df3e7d-19bc-4c2a-94bc-9a04ff93537c",
  "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation/17e81ef5b5e-40df3e7d-19bc-4c2a-94bc-9a04ff93537c",
  "resource": {
    "resourceType": "Observation",
    "id": "17e81ef5b5e-40df3e7d-19bc-4c2a-94bc-9a04ff93537c",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2022-01-22T13:17:34.43Z",
      "source": "#iLFSV7OLv0KF8dmQ",
      "profile": [
        "http://hl7.org/fhir/StructureDefinition/vitalsigns",
        "http://hl7.org/fhir/StructureDefinition/bodytemp"
      ]
    },
    "status": "final",
    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "vital-signs",
            "display": "vital-signs"
          }
        ]
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "8310-5",
          "display": "Body temperature"
        },
        {
          "system": "http://loinc.org",
          "code": "8331-1",
          "display": "Oral temperature"
        }
      ]
    }
  }
},
```



```
"text": "Body temperature"
},
"subject": {
  "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b"
},
"encounter": {
  "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
},
"effectiveDateTime": "2009-08-19T19:33:18-04:00",
"issued": "2009-08-19T19:33:18.715-04:00",
"dataAbsentReason": {
  "coding": [
    {
      "system": "http://terminology.hl7.org/CodeSystem/data-absent-reason",
      "code": "unknown",
      "display": "Unknown"
    }
  ],
  "text": "Unknown"
},
"search": {
  "mode": "match",
  "score": 1
},
{
  "id": "17e81f0fd34-6fc95b32-8346-4aec-9de3-072d12c992a5",
  "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation/17e81f0fd34-6fc95b32-8346-4aec-9de3-072d12c992a5",
  "resource": {
    "resourceType": "Observation",
    "id": "17e81f0fd34-6fc95b32-8346-4aec-9de3-072d12c992a5",
    "meta": {
      "versionId": "1",
      "lastUpdated": "2022-01-22T13:19:21.396Z",
      "source": "#iLFSV7OLv0KF8dmQ",
      "profile": [
        "http://hl7.org/fhir/StructureDefinition/vitalsigns",
        "http://hl7.org/fhir/StructureDefinition/bp"
      ]
    },
    "status": "final",
    "category": [
      {
        "coding": [
          {
            "system": "http://terminology.hl7.org/CodeSystem/observation-category",
            "code": "vital-signs",
            "display": "vital-signs"
          }
        ]
      }
    ],
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "85354-9",
          "display": "Blood Pressure"
        }
      ],
      "text": "Blood Pressure"
    },
    "subject": {
      "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882dfb2be4b"
    },
    "encounter": {
      "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
    }
  }
}
```



```
},
"effectiveDateTime": "1994-05-19T19:33:18-04:00",
"issued": "1994-05-19T19:33:18.715-04:00",
"dataAbsentReason": {
  "coding": [
    {
      "system": "http://terminology.hl7.org/CodeSystem/data-absent-reason",
      "code": "unknown",
      "display": "Unknown"
    }
  ],
  "text": "Unknown"
},
"component": [
  {
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "8462-4",
          "display": "Diastolic Blood Pressure"
        }
      ],
      "text": "Diastolic Blood Pressure"
    },
    "dataAbsentReason": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/data-absent-reason",
          "code": "unknown",
          "display": "Unknown"
        }
      ],
      "text": "Unknown"
    }
  },
  {
    "code": {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "8480-6",
          "display": "Systolic Blood Pressure"
        }
      ],
      "text": "Systolic Blood Pressure"
    },
    "dataAbsentReason": {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/data-absent-reason",
          "code": "unknown",
          "display": "Unknown"
        }
      ],
      "text": "Unknown"
    }
  }
],
"search": {
  "mode": "match",
  "score": 1
}
},
{
  "id": "17e8502f180-3c7e4770-3630-4654-922a-3f802c2939b1",
  "fullUrl": "https://apidev.geesemed.com:9443/fhir-server/api/v4/Observation/17e8502f180-3c7e4770-3630-4654-922a-3f802c2939b1",
```



```
"resource": {
  "resourceType": "Observation",
  "id": "17e8502f180-3c7e4770-3630-4654-922a-3f802c2939b1",
  "meta": {
    "versionId": "1",
    "lastUpdated": "2022-01-23T03:37:49.696Z",
    "source": "#iLFSV7OLv0KF8dmQ",
    "profile": [
      "http://hl7.org/fhir/StructureDefinition/vitalsigns",
      "http://hl7.org/fhir/StructureDefinition/heartRate"
    ]
  },
  "status": "final",
  "category": [
    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem/observation-category",
          "code": "vital-signs",
          "display": "vital-signs"
        }
      ]
    }
  ],
  "code": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "8867-4",
        "display": "Heart rate"
      }
    ],
    "text": "Heart rate"
  },
  "subject": {
    "reference": "Patient/17e77411359-8837d878-ea1e-45b5-bb89-882fdb2be4b"
  },
  "encounter": {
    "reference": "Encounter/17e77566282-0c9c236b-f0bd-45e0-9c61-80991a376967"
  },
  "effectiveDateTime": "2003-07-10T19:33:18-04:00",
  "issued": "2003-07-10T19:33:18.715-04:00",
  "dataAbsentReason": {
    "coding": [
      {
        "system": "http://terminology.hl7.org/CodeSystem/data-absent-reason",
        "code": "unknown",
        "display": "Unknown"
      }
    ],
    "text": "Unknown"
  },
  "search": {
    "mode": "match",
    "score": 1
  }
}
```



## Error Handling

| Error              | Description                               |
|--------------------|---|
| 200 - OK           | Everything worked as expected.            |
| 401 - Unauthorized | No valid Bearer token provided.           |
| 404 - Not Found    | The requested resource doesn't exist.     |
| 5xx - Server Error | Something went wrong on FHIR Server side. |

[OperationOutcome](#) explains the error reported

## Profile audience and scope

This profile is intended to be used by developers of apps that need to access user identity information or other FHIR resources by requesting authorization from OAuth 2.0 compliant authorization servers.

The profile defines a method through which an app requests authorization to access a FHIR resource, and then uses that authorization to retrieve the resource. Synchronization of patient context is not addressed; for use cases that require context synchronization (e.g., learning about when the in-context patient changes within an EHR session) In other words, if the patient chart is changed during the session, the application will not inherently be updated.

## Security and Privacy Considerations

### App Protection

The app is responsible for protecting itself from potential misbehaving or malicious values passed to its redirect URL (e.g., values injected with executable code, such as SQL) and for protecting authorization codes, access tokens, and refresh tokens from unauthorized access and use. The app developer must be aware of potential threats, such as malicious apps running on the same platform, counterfeit authorization servers, and counterfeit resource servers, and implement countermeasures to help protect both the app itself and any sensitive information it may hold. For background, see the [OAuth 2.0 Threat Model and Security Considerations](#).

Specific requirements are:

- Apps SHALL ensure that sensitive information (authentication secrets, authorization codes, tokens) is transmitted ONLY to authenticated servers, over TLS-secured channels.
- Apps SHALL generate an unpredictable `state` parameter for each user session; SHALL include `state` with all authorization requests; and SHALL validate the `state` value for any request sent to its redirect URL.
- An app SHALL NOT execute untrusted user-supplied inputs as code.
- App SHALL NOT forward values passed back to its redirect URL to any other arbitrary or user-provided URL (a practice known as an "open redirector").
- An app SHALL NOT store bearer tokens in cookies that are transmitted as clear text.
- Apps SHOULD persist tokens and other sensitive data in app-specific storage locations only, and SHOULD NOT persist them in system-wide-discoverable locations.



## Terms of Use

### 1. TERMS ACCEPTANCE AND REPRESENTATION

- a. Accepting the Terms. These Terms of Use ("Terms") govern your access to and use of the Certified GEESEMED EHR 2015 Edition API, documentation, services, etc. By accessing or using the Certified GEESEMED APIs, you agree to be bound by these Terms. "Certified GEESEMED EHR API" means the API provided by GEESEMED to allow authorized access to query our Client(s) Electronic Health Record system. You represent and warrant that you are at least 18 years of age and that you possess the legal right and ability to agree to these Terms and to use the Certified GEESEMED APIs in accordance with these Terms.
- b. Entity Representation. If you are using the Certified GEESEMED API on behalf of a legal entity (i.e. a Clinical software services company), you represent that you have proper authority to act on behalf of and bind the entity to these Terms, and by accepting, you accept on behalf of the entity (and all references to "you" in the Terms refer to the entity).

### 2. REPRESENTATIONS AND RESPONSIBILITIES

- a. Compliance. You agree to be financially responsible for your use of the Certified GEESEMED EHR APIs and to comply with your responsibilities and obligations as stated in these Terms. You agree to comply at all times with all applicable laws, rules and regulations relating to the use of the Certified GEESEMED EHR APIs. You hereby grant GEESEMED the right to monitor and periodically audit in a reasonable manner your use of the Certified GEESEMED APIs, your App and other activities related to your obligations under these Terms.
- b. Virus Warranty. You warrant that your Apps will not contain any viruses or other malicious computer instructions, devices, or techniques that can or were designed to threaten, infect, damage, disable, or shut down the GEESEMED EHR APIs, any technology, software, solution, equipment or any computer system.

### 3. GENERAL

- a. Changes. GEESEMED may, in its sole and absolute discretion, make changes, modifications or updates to the Certified GEESEMED EHR API (including without limitation changes to the capabilities and tech specs), without notice to you.
- b. Global Availability. GEESEMED makes no representations that the Certified GEESEMED EHR APIs are appropriate or available for use in locations outside of the United States, and access to them from such territories is at your own risk. Those who choose to access the Certified GEESEMED APIs from locations outside of the United States do so at their own initiative and are responsible for compliance with applicable local laws.
- c. Intellectual Property Rights. You acknowledge and agree that the Certified GEESEMED EHR APIs and GEESEMED's software, products and services are proprietary in nature, that GEESEMED claims all intellectual property rights therein as well as in all modifications, enhancements and alterations thereto, and that GEESEMED neither grants nor otherwise transfers any rights of ownership therein to you or any third party. No rights or licenses are granted by GEESEMED other than those rights expressly granted in these Terms, and GEESEMED reserves all rights not expressly granted.
- d. Waiver, Release and Limitation of Liability. You acknowledge and agree that neither GEESEMED nor any of its affiliates will have any responsibility or liability with respect to your or any third party's distribution, implementation, commercialization, use, or other form of exploitation of any app, software, solution, service or other technology created by you or another third party. As between you and GEESEMED, you are solely responsible and liable for all representations, warranties, support and other obligations made by you to any third party related to any app, software, solution, service or other technology created by you, including claims arising from product liability, breach of warranty, and intellectual property infringement. YOU HEREBY RELEASE AND FOREVER WAIVE ANY AND ALL CLAIMS YOU MAY HAVE AGAINST GEESEMED, ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, INFORMATION PROVIDERS OR SUPPLIERS FOR LOSSES OR DAMAGES YOU SUSTAIN IN CONNECTION WITH YOUR USE OF THE CERTIFIED GEESEMED EHR API AND ANY GEESEMED WEBSITES. GEESEMED MAKES NO REPRESENTATIONS ABOUT THE SUITABILITY, RELIABILITY, AVAILABILITY, TIMELINESS AND ACCURACY OF THE CERTIFIED GEESEMED APIS OR OTHER INFORMATION, TECHNOLOGY, SOFTWARE, PRODUCTS AND SERVICES PROVIDED BY GEESEMED FOR ANY PURPOSE. ALL SUCH TECHNOLOGY, INFORMATION, SOFTWARE, PRODUCTS AND SERVICES ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. GEESEMED HEREBY DISCLAIMS ALL WARRANTIES AND CONDITIONS WITH REGARD TO THE CERTIFIED GEESEMED APIS, OTHER TECHNOLOGY, INFORMATION, SOFTWARE, SOLUTIONS, PRODUCTS AND SERVICES, INCLUDING ALL IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. TO THE FULLEST EXTENT PERMITTED BY LAW, IN NO EVENT SHALL GEESEMED, ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, AND/OR ITS SUPPLIERS BE LIABLE FOR ANY DIRECT, INDIRECT, PUNITIVE, INCIDENTAL, SPECIAL, CONSEQUENTIAL DAMAGES OR ANY OTHER DAMAGES WHATSOEVER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF USE, DATA OR PROFITS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE ACCESS, USE OR PERFORMANCE OF THE CERTIFIED GEESEMED APIS, WITH THE DELAY OR INABILITY TO USE THE CERTIFIED GEESEMED EHR APIS OR RELATED TECHNOLOGY, SOFTWARE OR SERVICES, THE PROVISION OF OR FAILURE TO PROVIDE THE CERTIFIED GEESEMED APIS, SOFTWARE OR SERVICES, OR FOR ANY INFORMATION, SOFTWARE, PRODUCTS AND SERVICES OBTAINED FROM GEESEMED, OR OTHERWISE ARISING OUT OF THE USE OF THE CERTIFIED GEESEMED APIS, WHETHER BASED ON CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, EVEN IF GEESEMED HAS BEEN ADVISED OF THE POSSIBILITY OF DAMAGES. BECAUSE SOME STATES/JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU. IF YOU ARE DISSATISFIED WITH ANY PORTION OF THE CERTIFIED CLINCMAX EHR APIS, OR WITH THESE TERMS OF USE, YOUR SOLE AND EXCLUSIVE REMEDY IS TO DISCONTINUE USING THE CERTIFIED GEESEMED EHR APIS. NOTWITHSTANDING THE FOREGOING PARAGRAPH, THE TOTAL LIABILITY OF GEESEMED, ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, INFORMATION PROVIDERS AND SUPPLIERS, IF ANY, FOR LOSSES OR DAMAGES SHALL NOT EXCEED THE FEES PAID BY YOU FOR THE USE OF THE PARTICULAR TECHNOLOGY, SOFTWARE, PRODUCT, INFORMATION OR SERVICE PROVIDED BY GEESEMED.
- e. Indemnification. YOU AGREE TO INDEMNIFY, DEFEND AND HOLD HARMLESS GEESEMED, ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, INFORMATION PROVIDERS AND SUPPLIERS FROM AND AGAINST ALL CLAIMS, LIABILITIES, LOSSES, EXPENSES, DAMAGES AND COSTS,



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- f. Term and Termination. Either you or GEESEMED may terminate your right to use the Certified GEESEMED EHR APIs at any time, with or without cause, upon notice. GEESEMED also reserves the right to disable your API access in a production environment at any time, with or without cause. GEESEMED reserves the right to disable access to the GEESEMED EHR APIs if your App poses any security, privacy, or patient safety risks. The provisions concerning Indemnification, Waiver, Release and Limitation of Liability, and General shall survive any termination of these Terms.
  - g. Governing Law. These Terms are governed by US federal law or the laws of the State of California
4. Application developer affirmations to Certified API Developers regarding the ability of their applications to secure a refresh token, a client secret, or both, must be treated in a good faith manner