NextGen® Office SMART APP Launch FHIR API Developer Guide

for NextGen® Office

Purpose of this document

- This document is written for developers building client applications that connect to the NextGen® Office SMART APP Launch API. These API enables providers to allow vendors of their choice to obtain USCDIv1 data of a single patient.

This document covers the following:

1. How to register as a client application and gain access credentials
2. A detailed walk-through of using the NextGen® Office SMART APP Launch API

How to register your client application to access NextGen® Office SMART APP Launch API

Send an email to nextgen-office-api@nextgen.com with the following information:
- Contact e-mail address
- Organization name
- Organization description
- Client application name
- Client application use-case description
- Client App Launch Url (should not include query parameters)
- Client App Icon Url (Max size < 128 kB, Aspect Ratio 1:1, Min 24px x 24px)
- OAuth Callback URL (should not include parameters)

The NextGen® Office API team will issue client credentials and/or request additional information.

Detailed walk-through of using the NextGen® Office Smart App Launch API

The following instructions are from an internal validation of the NextGen® Office SMART App Launch API. SMART App Launch APIs power the category of apps used by provider organizations to integrate with their NextGen® Office's EHR system. These apps can use SMART App Launch APIs to add value and functionality across a variety of clinical, administrative, and other functions.

To use the SMART App Launch APIs developers need to register the app with NGO with the correct details of the launch URL and Practice should have an active subscription for the registered App.

SMART APP Launch API Developer Guide

The steps to Launch a Smart App from NGO's EHR are as below:
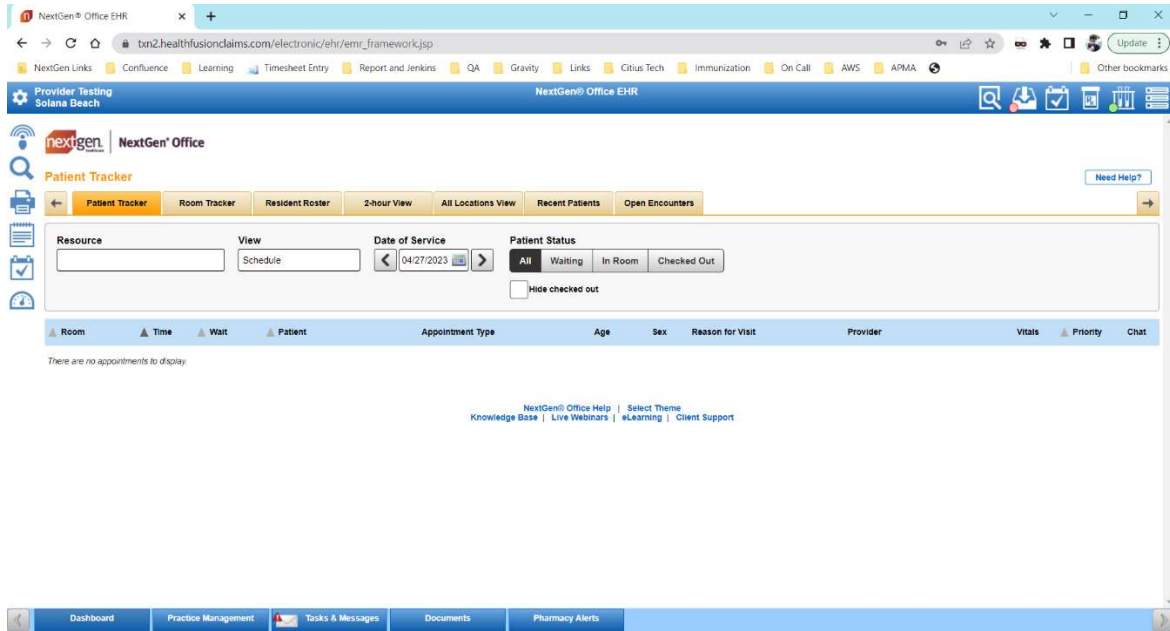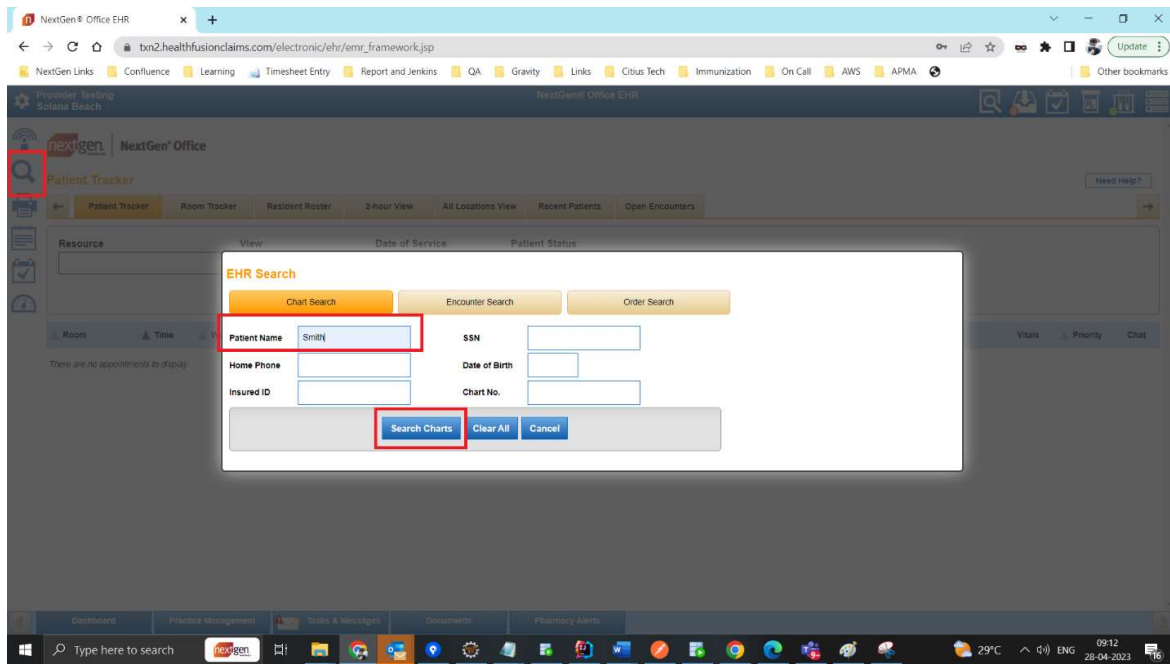1. Login to EHR.
    Provider:
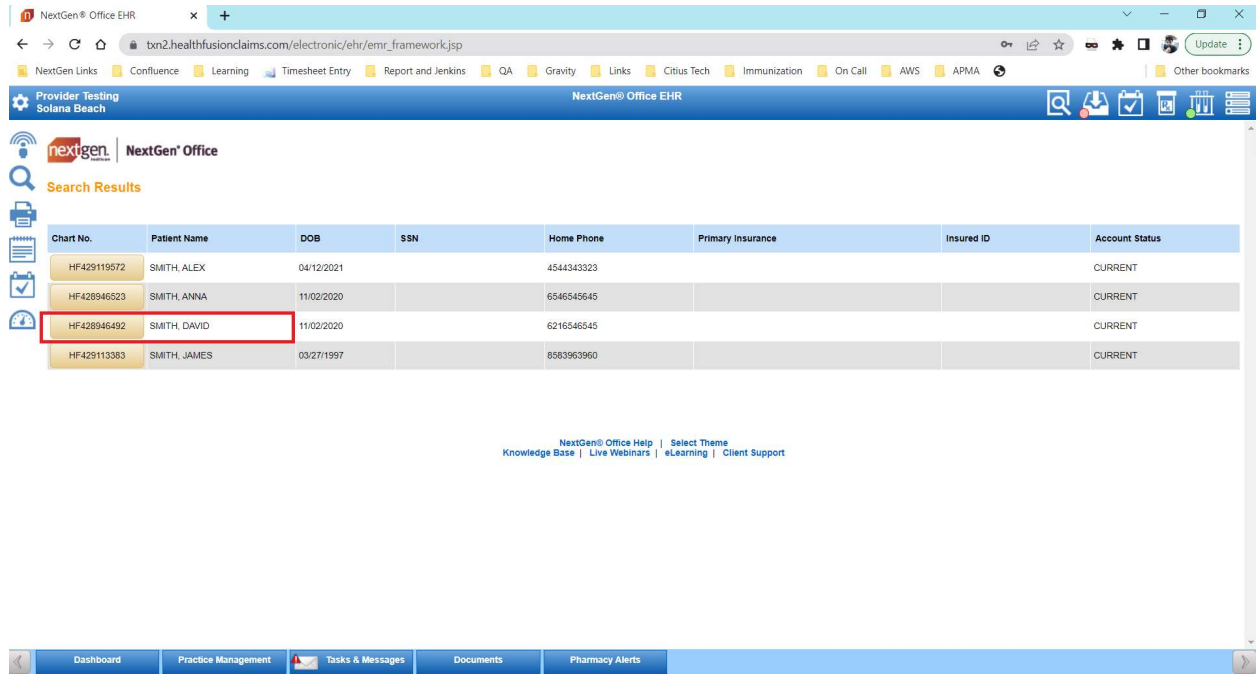   *Testing, Provider*
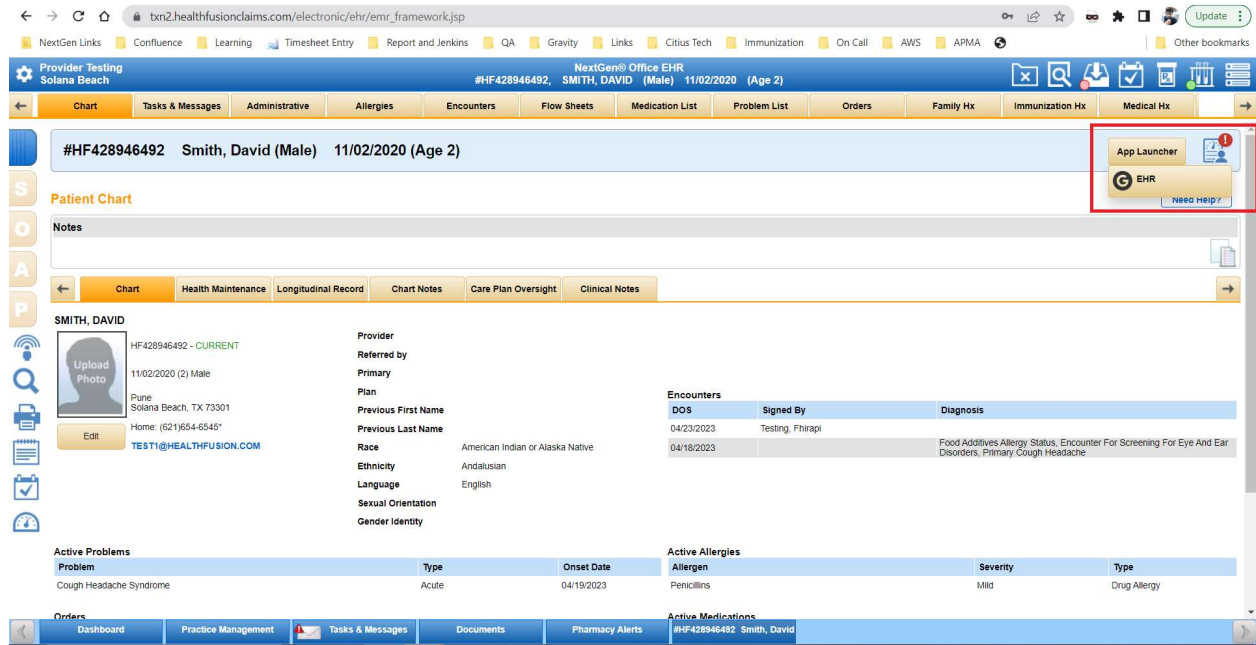   *UN: ProviderAPI*
    PW: Next@123

2. Search for a particular Patient and Open the Patient Chart
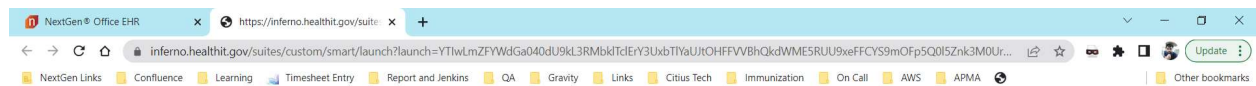
3. Launch the Smart App "EHR".

4. SMART APP will be launched in **a New Tab**.

When a Smart on FHIR App is launched from inside the EHR, a launch parameter is created in the URL. The **launch** parameter is a required parameter in the authorization URL along with the **aud** parameter to request for authorization code.

Launch parameter consists of **Realtime user id, Launch Context, Session ID, Patient ID and Provider Username** *encrypted and encoded* into the Url for provider authentication.

In postman select Authorization as Oauth2:

- **Grant Type**: Authorization Code
- **Callback URL:** https://oauth.pstmn.io/v1/callback
- **Authorization URL:** https://idp-prod.prod.ngo.nextgenaws.net/auth/realms/nextgen/protocol/openid-connect/auth?launch=YTIwLmpJWEtFOWphczYzWkVDODZRSVBHTUE2ZGtDb1NTbTl0NVlLNndSVVhFcGs2cGNxdnFmVXVvL2RqZWRCQmU2UXRTOUFYQUxjU1MzaFVxM3hHUEZudThaT2tSWWdPVFBDaHh6a3RTaVQ4cmkxRmVRUHNhSVlJYlM3TUEwYWpNQzdFNmZRbklVOTBVakZ3Y0xBQTVsdi92L1g4OXFtSTloUUVuTkxKbms2NGRPOEhWdlNsN2tRNDc4OUo2NkU3K3ZyTUM0V2dTYjBzeEgwWmllK2pZTjNCSFBLSWNuSEZgcUFDbG9iSjBQbzFQT1Y0a0d4ZUllBPT0=&aud=https://fhir.meditouchehr.com/api/fhir/r4

- **Access Token URL:** https://idp-prod.prod.ngo.nextgenaws.net/auth/realms/nextgen/protocol/openid-connect/token

- **Test Client ID:** ngo-ehr
- **Test Client Secret**: 9w0LTBFLZrGJFxLMDX8d9yFjmrIC6l24
- **Scope:** {Add Allowed scopes}
- **State:** Blank
- **Client Authentication:** Send as Basic Auth header.

Validation Process Steps

The steps below can be performed either manually with a tool like **curl** or using **Postman** which automates steps like OAuth token generation.

1. **Open Authorize URL in Browser:**
   The expected Authorize URL components are:
   a. **Endpoint**: https://idp-prod.prod.ngo.nextgenaws.net/auth/realms/nextgen/protocol/openid-connect/auth?launch=YTIwLklGbklSTjVxa1gyYXgxT054M3loaVVCalBFOFNjemczdkdaY0pTUGRBSE5NNWpsTkpqUTFFbWx2d0YzdlYyYkQ3eGl6SEVlUFZOUzRMaWtRQ2hDV2pqc3RsS3BXWUNqTjJOb3ZPUFVWVkRzZ2RkeEJNcFNDaE1KSUFUWDQ2c3J1cjBrM3ZHYnoxdE95UEhBS05CNTJyZzJ2cTc1L3FIQk9xeFFRFQ2ZIdTVJRFVUM3Bna1hKYlNmdld4Vk9HZXpYSEY0MHh6YzhVenVJTkZPOG45QmZ6MVWZXMmJyTXZ2cG5XTHcxbk5nZFRXUm8yMGc9PQ==&aud=https://fhir.meditouchehr.com/api/fhir/r4
   b. **Parameters**:

       i.   response_type= code
      ii.   client_id= {CLIENT_ID_ASSIGNED_TO_DEVELOPER}
     iii.   redirect Uri= {APP_REDIRECT_URL}
     iv.   scope= {APP_REDIRECT_SCOPE}

Example Authorize URL Launched by 3ʳᵈ Party App:
https://idp-prod.prod.ngo.nextgenaws.net/auth/realms/nextgen/protocol/openid-connect/auth?launch=YTIwLklGbklSTjVxa1gyYXgxT054M3loaVVCalBFOFNjemczdkdaY0pTUGRBSE5NNWpsTkpqUTFFbWx2d0YzdlYyYkQ3eGl6SEVlUFZOUzRMaWtRQ2hDV2pqc3RsS3S3BXWUNqTjJOb3ZPUFVWVkRzZ2RkeEJNcFNDDaE1KSUFUWDQ2c3J1cjBrBrM3ZHYnoxdE95UEhBS05CNTJyZzJ2cTc1L3FIQk9xeeFRFQ2ZIdTVJRFVUM3Bna1hKYlNmdld4Vk9HZXpYpYSEY0MHh6YzhVenVVJTkZPOG45QmZMVWZXMmJyTXZ2cG5XGTHcxbk5nZFRXUm8yMGc9PQ==&aud=https://fhir.meditouchehr.com/api/fhir/r4&response_type=code&client_id=ngo-ehr&scope=openid%20launch%20offline_access%20fhirUser%20user%2F*.read&redirect_uri=https%3A%2F%2Foauth.pstmn.io%2Fv1%2Fcallback

2. **Select Scope for the Provider:**
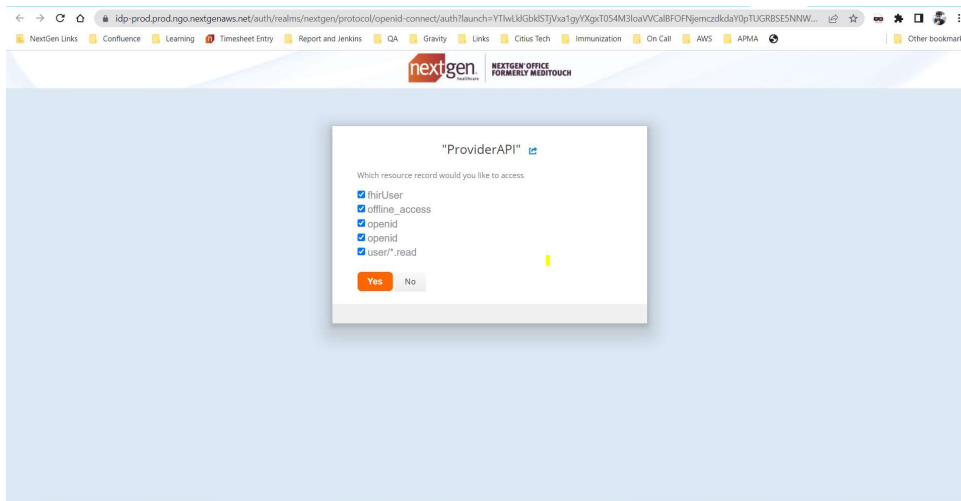
3. **Authorization   Code is returned in URL** upon successful authentication (Example: https://oauth.pstmn.io/v1/callback?session_state=e2f5354f-0c19-40ec-bf27-9f41fe6de65b&code= **{ISSUED AUTHORIZATION CODE}**
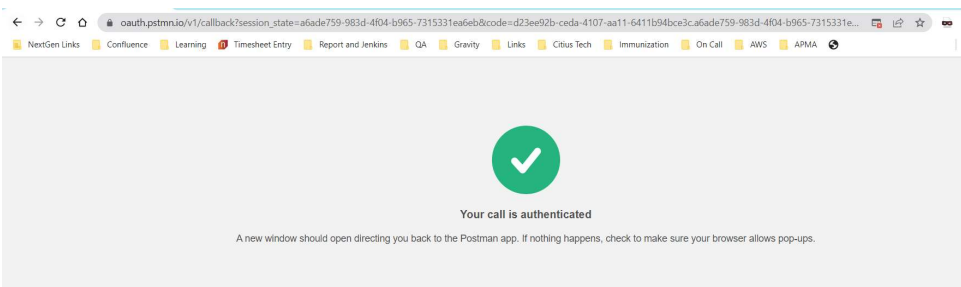
4. **Exchange Authorization Code for Token:**
   a. The expected components of the request to the access token route are:
      i. **Method**: POST
      ii. **Endpoint**:https://idp-prod.prod.ngo.nextgenaws.net/auth/realms/nextgen/protocol/openid-connect/token
      iii. **Authorization: Basic Auth: Enter Client ID and Client Secret**
      iv. **Headers:**

         1. Content-Type=application/x-www-form-urlencoded
         2. A Basic Authorization header (Authorization=Basic {encoded string} using a base64 encoded representation of the following string:
            client_id:client_secret

         Authorization Header Example:
         Authorization=Basic {base64_encoded_representation_of_client_id: client_secret}

      v. **Body**:

         1. grant_type=authorization_code
         2. code= {ISSUED AUTHORIZATION CODE}
         3. redirect_uri={APP_REDIRECT_URL}

         Example Request to /access_token (curl Format):

```
curl --location --request POST ' https://idp-
prod.prod.ngo.nextgenaws.net/auth/realms/nextgen/protocol/openid-
connect/token' \

--
header 'Authorization: Basic eW91ckhlYWx0aEZpbGU6VmpwN0RGVlJSVXl2UTU0QVVPS
XJqSjdNQW1ZSUtOSno=' \

--header 'Content-Type: application/x-www-form-urlencoded' \

--data-urlencode 'grant_type=authorization_code' \

--data-urlencode 'code=c8b55047-2275-4570-8a30-c56bedaf2564.6fd6bfcf-55a5-47f7-
b067-a233e178944c.52449374-f741-427d-859f-f88ca01dbea0' \

--data-urlencode 'redirect_uri=https://oauth.pstmn.io/v1/callback' \
```

   b. A successful call to /access_token will produce a response that includes:
      i. The `access_token`
      ii. `expires_in`.
      iii. `refresh_expires_in`;

           iv. `refresh_token`
           v. `token_type`
           vi. `id_token`
           vii. `not-before-policy`
           viii. `session_state`
           ix. `scope`
           x. `resource`
           xi. `patient`
           xii. `need_patient_banner`
           xiii. `practice_id`
           xiv. `smart_style_url`
           xv. `client_type`

Example Response from /access_token

```
{
"access_token": "{access_token_value}",

"expires_in":(expressed_in_seconds),

"refresh_expires_in":(expressed_in_seconds),

"refresh_token": "{refresh_token_value}",

"token_type": "Bearer",

"id_token": "{id_token_value}",

"not-before-policy": 1661487077,

"session_state": " 5113f956-1d90-45b1-b3ff-197533c4746b",

"scope": "{assigned_scope}",

"resource": "",

"patient": " 428946492",

"need_patient_banner": "false",

"smart_style_url": "
https://fhir.meditouchehr.com/electronic/json/api/ehrSmartStyleConfig.json
",

"client_type": "EHR"

}
```

5. **Request FHIR Resource: {FHIRurl}/Patient/{id}**

Using the "Reference Value" URL from the prior request, obtain FHIR resource data from the *{FHIRurl}/Patient/{id}* endpoint.

    a. **Method**:   GET
    b. **Endpoint**: https://fhir.meditouchehr.com/api/fhir/r4/Patient/428946492
    c. **Authorization: Bearer Token** :{Token generated in previous step}

    d. **Header**: An OAuth2 Authorization header with a value of Bearer {access_token}
    e. Example Request to *{FHIRurl}/Patient/{id}:*
      curl --location --request GET
      'https://fhir.meditouchehr.com/api/fhir/r4/Patient/428946492' \
      --header 'Authorization: Bearer {access_token_value}' \
    f. Response from *{FHIRurl}/Patient/{id}:*

```json
{
    "resourceType": "Patient",
    "id": "428946492",
    "extension": [
        {
            "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": "1002-5",
                        "display": "American Indian or Alaska Native"
                    }
                },
                {
                    "url": "text",
                    "valueString": "American Indian or Alaska Native"
                }
            ]
        },
        {
            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
ethnicity",
            "extension": [
                {
                    "url": "ombCategory",
                    "valueCoding": {
                        "system": "urn:oid:2.16.840.1.113883.6.238",
                        "code": "2135-2",
```

```json
                        "display": "Hispanic or Latino"
                    }
                },
                {
                    "url": "detailed",
                    "valueCoding": {
                        "system": "urn:oid:2.16.840.1.113883.6.238",
                        "code": "2138-6",
                        "display": "Andalusian"
                    }
                },
                {
                    "url": "text",
                    "valueString": "Hispanic or Latino"
                }
            ]
        },
        {
            "url": "http://hl7.org/fhir/us/core/StructureDefinition/us-core-
birthsex",
            "valueCode": "M"
        }
    ],
    "identifier": [
        {
            "use": "official",
            "type": {
                "coding": [
                    {
                        "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
                        "version": "1.0",
                        "code": "MR",
                        "display": "Medical record number"
                    }
                ],
                "text": "Unique Id for EHR"
            },
            "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
            "value": "428946492",
            "assigner": {
                "reference": "Organization/1673497"
            }
        }
    ],
    "active": true,
    "name": [
        {
            "use": "usual",
            "family": "SMITH",
            "given": [
```

```
                "DAVID"
            ]
        }
    ],
    "telecom": [
        {
            "system": "phone",
            "value": "(621)654-6545",
            "use": "home"
        }
    ],
    "gender": "male",
    "birthDate": "1996-11-02",
    "address": [
        {
            "line": [
                "PUNE"
            ],
            "city": "SOLANA BEACH",
            "state": "TX",
            "postalCode": "73301",
            "period": {
                "start": "2023-04-18T22:48:58-07:00",
                "end": "2023-04-20T00:54:21-07:00"
            }
        }
    ],
    "communication": [
        {
            "language": {
                "coding": [
                    {
                        "system": "urn:ietf:bcp:47",
                        "code": "en",
                        "display": "English"
                    }
                ]
            },
            "preferred": true
        }
    ]
}
```

7. **Request Additional FHIR Resources**

Please consult the full documentation at (For Reference only)
https://petstore.swagger.io/?url=https://hfstatic.s3.amazonaws.com/swagger/fhirswagger.yaml (Try it out function available for Standalone Patient APIs only) to obtain the full set of available endpoints and details for calling those additional NextGen® Office Patient Access API routes using the obtained Patient {id}.