NextGen® Office Patient Access API Developer Guide

for NextGen® Office

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May 31st, 2023

Purpose of this document

This document is written for developers building client applications that connect to the NextGen® Office Patient API. These client applications give patients access to their health records in the application of their choosing, outside of access via YourHealthFile.com.
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 Patient Access API

How to register your client application to access NextGen® Office Patient Access 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
- OAuth Callback URL (should not include query parameters)
- The NextGen® Office API team will issue client credentials and/or request additional information.

Detailed walk-through of using the NextGen® Office Patient Access API

The following instructions are from an internal validation of the NextGen® Office Patient Access API. These instructions exercise API authentication & data retrieval process as would a 3rd Party Developer whose application Callback URL had been registered by NextGen® Office and had subsequently been issued the requisite application credentials (i.e., client ID & client secret) and test patient credentials (i.e., NextGen® Office Patient API username & password).

Test Patients:
- *Smith, David HF428946492 (UN/PW: DavidFHIR/password)*
- *Smith, Anna HF428946523 (UN/PW: AnnaFHIR/Password01)*
- *Smith, Alex HF429119572 (UN/PW: AlexSmithFhir/Password01)*

- **Grant Type**:   Authorization Code (With PKCE)
- **Callback URL:**   https://oauth.pstmn.io/v1/callback
- **Authorization URL:** https://idp-prod.prod.ngo.nextgenaws.net/auth/realms/nextgen/protocol/openid-connect/auth?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:** yourHealthFile
- **Test Client Secret**: P2uCnXestgMxmLWnlUXNDO8u98qPa4NZ
- **Code Challenge Method**: SHA-256
- **Code Verifier**: {RANDOM_STRING_WITH 43 TO 128 CHARS}
- **Scope:** {Add Allowed scopes}
- **State:** Blank
- **Client Authentication:** Send as Basic Auth header.
- **Test Patient's NextGen® Office Patient Access API Credentials:**
  - UN: DavidFHIR
  - PW: password

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.

Once we fill in the above authorization data, we can generate an authorization code by launching the URL generated in the Browser.

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?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}
   v.   Code Verifier={RANDOM_STRING_WITH 43 TO 128 CHARS}
   vi.   code challenge method=SHA-256

   Example Authorize URL Launched by 3rd Party App:
   App

   https://idp-prod.prod.ngo.nextgenaws.net/auth/realms/nextgen/protocol/openid-connect/auth?&aud=https://fhir.meditouchehr.com/api/fhir/r4&response_type=code&client_id=yourHealthFile&scope=openid%20patient%2FMedication.read%20patient%2FCondition.read%20patient%2FPatient.read%20offline_access%20patient%2FAllergyIntolerance.read%20fhirUser%20patient%2FCareTeam.read%20patient%2FDevice.read%20launch%2Fpatient%20patient%2F

[DiagnosticReport.read%20patient%2FCarePlan.read%20patient%2FDocumentReference.read&r
edirect_uri=https%3A%2F%2Foauth.pstmn.io%2Fv1%2Fcallback&code_challenge=aXlhsuyOvsg2
82Uf4ltfGM6BnStnKKX_kLyEbSWyud0&code_challenge_method=S256](#)

2.   **Patient Enters their NextGen® Office Patient Access API Credentials:**
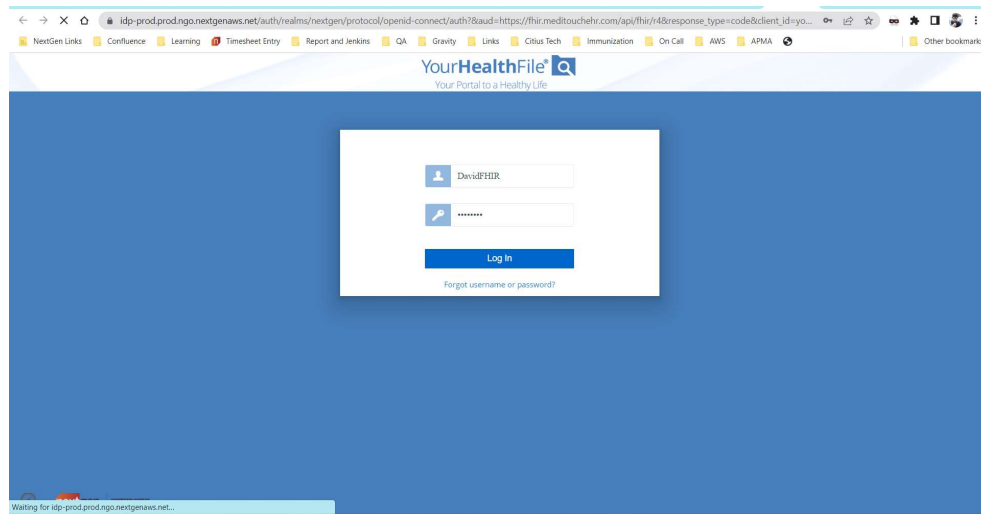
Note:
This screen will display only the Master patient if there aren't any dependent patients.
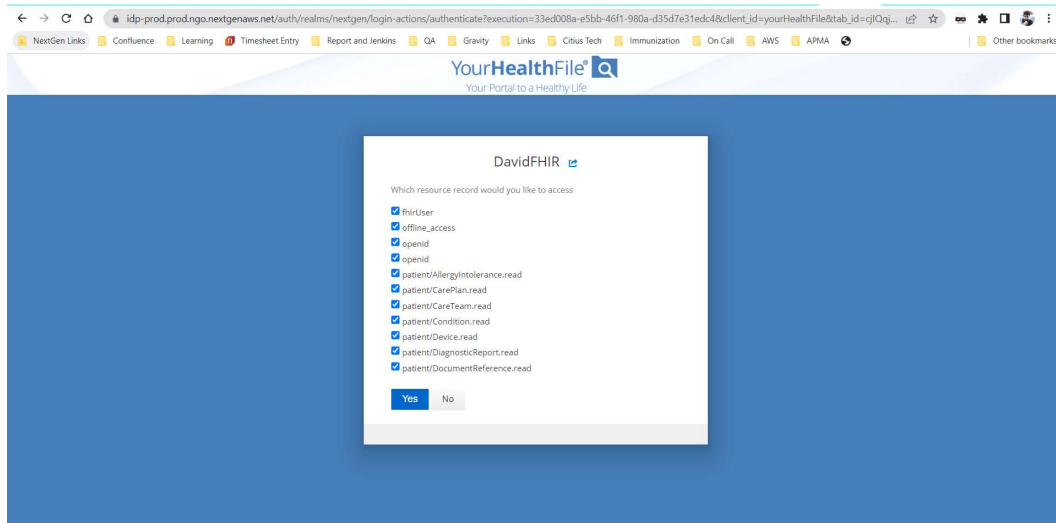
3. **Authorization Code is returned in URL** upon successful authentication (Example: https://oauth.pstmn.io/v1/callback?session_state=e2f5354f-0c19-40ec-bf27-9f41fe6de65b&code= **{ISSUED AUTHORIZATION CODE}**
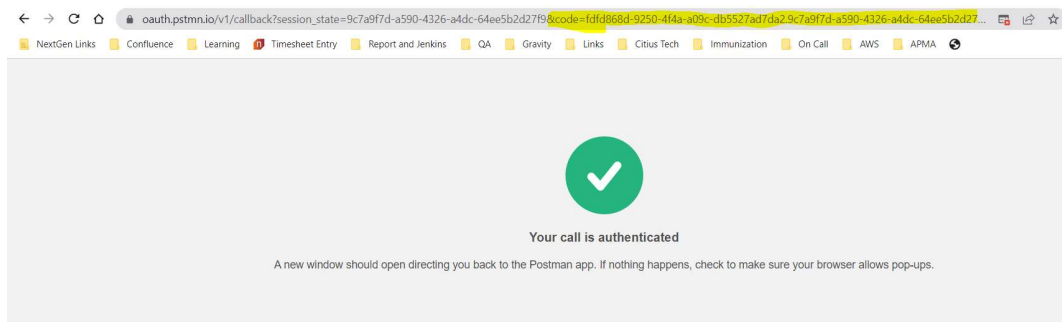
4. **Exchange Authorization Code for Token:**
   a. The expected components of the request to the access token route are:
      i. **Method**:   POST
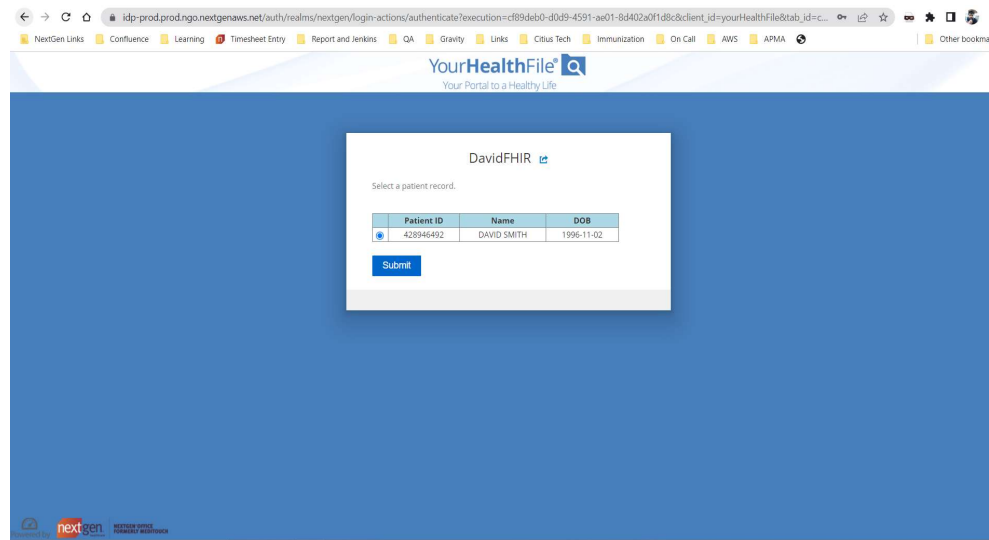   ii. **Endpoint**:   https://idp-prod.prod.ngo.nextgenaws.net/auth/realms/nextgen/protocol/openid-connect/token
      iii. **Authorization: Basic Auth: Enter Client ID and Client Secret**
      iv. **Headers:**

         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**:   (x-www-form-urlencoded)
>   1. grant_type=authorization_code
>   2. code= **{ISSUED AUTHORIZATION CODE}**
>   3. redirect_uri={APP_REDIRECT_URL}
>   4. Code Verifier= {Use the same code verifier as used while generating code}

<u>Example Request to /access_token (curl Format):</u>

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

--
header 'Authorization: Basic eW91ckhlYWx0aEZpbGU6VmpwwN0RGVlJSVXl2UTU0QVVPS
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' \

--data-
urlencode 'code_verifier=thisisasecretciodetotesttheauthorizationoforintegrationtesting'
```

> 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`
    xvi. `subscription_type`

<u>Example Response from /access_token</u>

```
{

"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": 9c7a9f7d-a590-4326-a4dc-64ee5b2d27f9
",

"scope": "{assigned_scope}",

"resource": "Person/4007449",

"patient": " 428946492",

"need_patient_banner": "false",

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

"client_type": "STANDALONE"

"subscription_type": "Indefinite"

}
```

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",
                        "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": "2023-04-20T01:32:32-07:00"
                }
            }
        ],
        "communication": [
            {
                "language": {
                    "coding": [
                        {
                            "system": "urn:ietf:bcp:47",
                            "code": "en",
                            "display": "English"
                        }
                    ]
                },
                "preferred": true
            }
        ]
}
```

6. **Request Additional FHIR Resources**

Please   consult the full documentation at
**https://petstore.swagger.io/?url=https://hfstatic.s3.amazonaws.com/swagger/swaggerR4.ya
ml** 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}.

   a. **Method:** GET
   b. **Base URL + Endpoint:**
      https://fhir.meditouchehr.com/api/fhir/r4/{endpoint}
   c. **Header**: An OAuth2 Authorization header with a value of Bearer {access_token}