



DIBBs Query Connector

User Acceptance Testing Guide

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Prepared by:

U.S. Department of Health and Human Services



**U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES**
CENTERS FOR DISEASE
CONTROL AND PREVENTION



Version History

Version	Author	Reviewed By	Revision Date	Revision Notes
1.0	Matthew Goldberg	Maya Mascarenhas	04/16/2026	
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1 Objectives

This guide lays out the steps for public health investigators and other end users to conduct user acceptance testing (UAT) for Query Connector (QC). Testing ensures the application behaves as expected and allows users to identify bugs, workflow issues, or data gaps before the broader launch.

2 Background

Query Connector is a free, open-source application offered by CDC that helps public health staff quickly retrieve patient data from healthcare organizations (HCOs) and health information exchanges (HIEs) using targeted, patient-specific Fast Healthcare Interoperability Resources® (FHIR®)¹ queries—reducing reliance on phone calls, faxing, and manual portal searches.

3 Test plan

3.1 Testing flow

You'll complete testing in three steps:

1. Test general functionality.
2. Test admin and custom query building workflow.
3. Test the querying process using a specific test patient.

Use the Query Connector UAT Checklist to confirm completion of tasks for each of the steps below. Make sure you pull it up for reference.

3.2 General functionality testing

Open Query Connector and verify the following:

- Confirm successful login using your credentials.
- Verify the app loads without errors and menus are responsive.
- Check that queries are visible and populated.
 - If queries are missing, the database needs to be seeded. Follow instructions in the [Database section \(step 5\) of the Deployment Guide](#) to load the initial data.

3.3 Admin and Super Admin feature testing

If you are only testing as a standard user, you can skip this section.

¹ HL7®, and FHIR® are the registered trademarks of Health Level Seven International and their use of these trademarks does not constitute an endorsement by HL7.

3.3.1 Query building (Admin/Super Admin)

Scenario: Create a custom value set and query to pull in data on Polycystic Ovary Syndrome (PCOS) from patients of interest using ICD-10 and SNOMED codes.

3.3.1.1 Value Set description setup

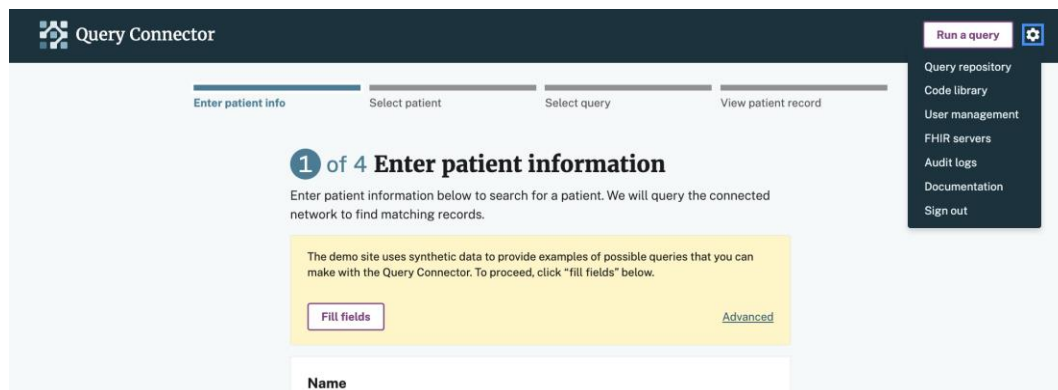
There are **three** ways to define the codes needed for a query:

1. Uploading a CSV via the Code Library
2. Manual code entry via the Code Library
3. Build on-the-fly via the Query Repository

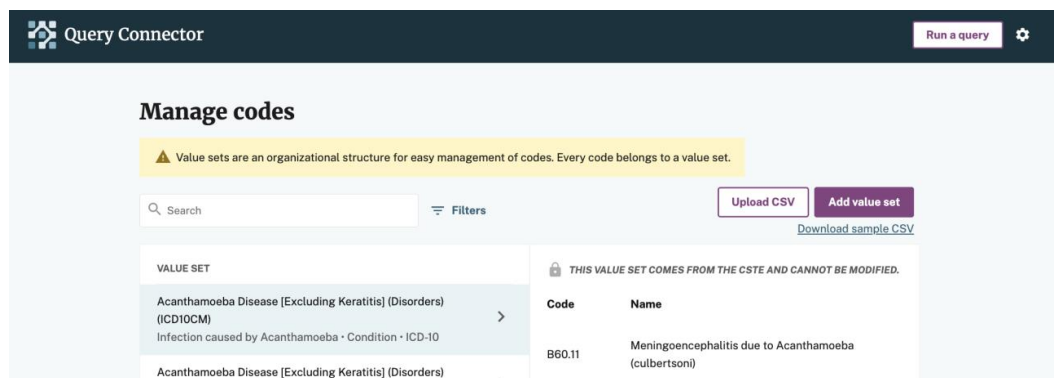
3.3.1.1.1 Option 1: Upload CSV via the Code Library

Verify the following:

1. Navigate to the Code library via Settings (gear icon) in the upper right-hand corner.



2. On the Manage codes page, click "Download sample CSV."



3. Edit your downloaded CSV file to reflect the below image:

Custom Value Sets PCOS

value set name	category	code system	code	display
UAT PCOS 1	Conditions	icd-10-cm	E28.2	Polycystic ovarian syndrome.
UAT PCOS 2	Conditions	SNOMED	69878008	Polycystic ovaries

- Click "Upload CSV" to import the list of ICD-10 or SNOMED codes.
- After seeing the success banner, refresh the page and search for "UAT PCOS."

Manage codes

Value sets are an organizational structure for easy management of codes. Every code belongs to a value set.

Search: Filters Upload CSV Add value set [Download sample CSV](#)

VALUE SET	Code	Name
UAT PCOS 1 Custom Code Condition • Condition • ICD-10 Created by mario@dibbs.tools	E28.2	Polycystic ovarian syndrome.
UAT PCOS 2 Custom Code Condition • Condition • SNOMED Created by mario@dibbs.tools		

[Edit codes](#) [Delete value set](#)

3.3.1.1.2 Option 2: Manual code entry via the Code Library

Verify the following:

- Navigate to the Code library via Settings (gear icon) in the upper right-hand corner.
- Click "Add value set" to define your ICD-10 and SNOMED codes before building your query.

Query Connector Run a query

Manage codes

Value sets are an organizational structure for easy management of codes. Every code belongs to a value set.

Search: Filters Upload CSV Add value set [Download sample CSV](#)

VALUE SET	Code	Name
Acanthamoeba Disease [Excluding Keratitis] (Disorders) (ICD10CM) Infection caused by Acanthamoeba • Condition • ICD-10	B60.11	Meningoencephalitis due to Acanthamoeba (culbertsoni)

THIS VALUE SET COMES FROM THE CSTE AND CANNOT BE MODIFIED.



3. On the New value set page:
 - a. Enter a descriptive name, such as “PCOS Diagnostic Criteria.”
 - b. Select a relevant category (e.g., Conditions) from the dropdown.
 - c. Code system: Select ICD-10 and SNOMED CT
4. For ICD-10, enter:
 - a. Code #: E28.2
 - b. Code name: Polycystic ovarian syndrome
5. For SNOMED CT, enter:
 - a. Code #: 69878008
 - b. Code name: Polycystic ovarian syndrome

New value set

[Save value set](#)

Value set description

Value set name (Required)

PCOS Diagnostic Criteria

Category (Required)

Conditions

Code system (Required)

ICD-10

Codes

Code #

Code name

[+ Add code](#)

6. After clicking “Save value set,” a success message should appear to show the saved state.
7. Return to the Code library and search for PCOS Diagnostic Criteria

Manage codes

Value sets are an organizational structure for easy management of codes. Every code belongs to a value set.

[Filters](#)[Upload CSV](#)[Add value set](#)[Download sample CSV](#)

VALUE SET

PCOS Diagnostic Criteria

Custom Code Condition • Condition • ICD-10

Created by [mario@dibbs.tools](#)**PCOS Diagnostic Criteria**

Custom Code Condition • Condition • SNOMED

Created by [mario@dibbs.tools](#)[Edit codes](#)[Delete value set](#)

Code

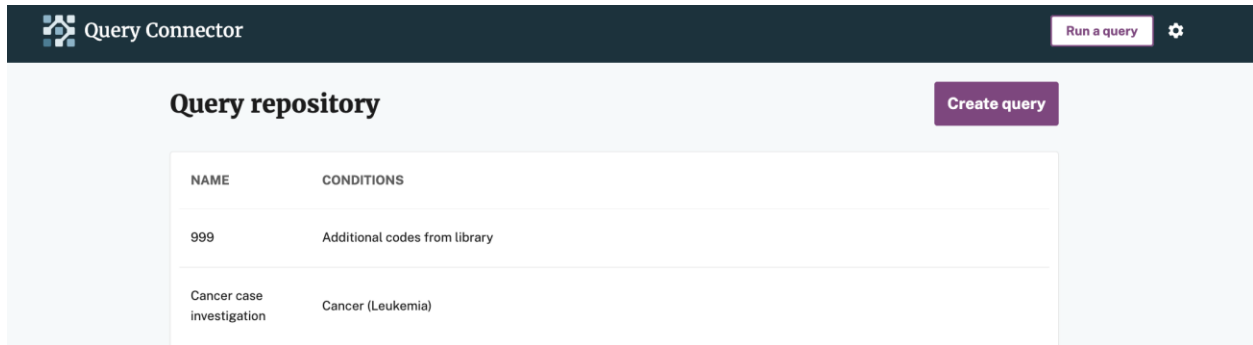
Name

E28.2

Polycystic ovarian syndrome.

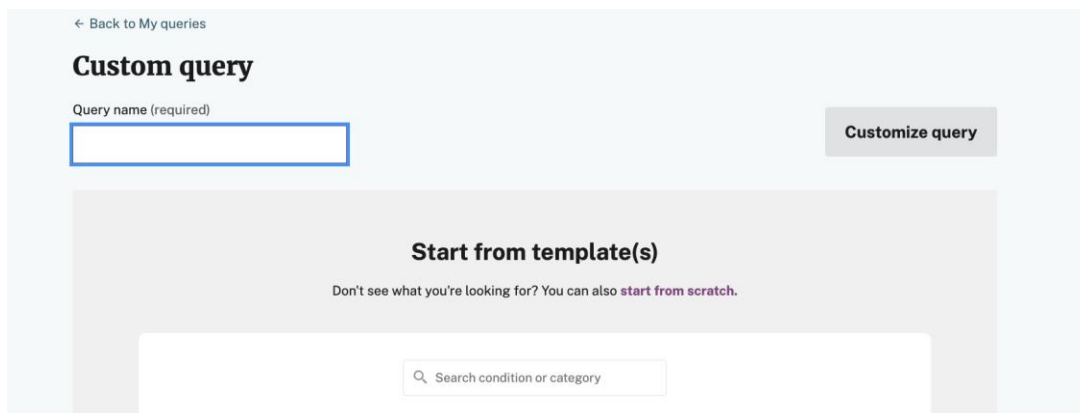
3.3.1.1.3 Option 3: Build on-the-fly via the Query Repository

1. Navigate to the Query Repository and click “Create query.”



NAME	CONDITIONS
999	Additional codes from library
Cancer case investigation	Cancer (Leukemia)

2. Input a Query name (e.g., Polycystic Ovary Syndrome) and click “Start from scratch.”



← Back to My queries

Custom query

Query name (required)

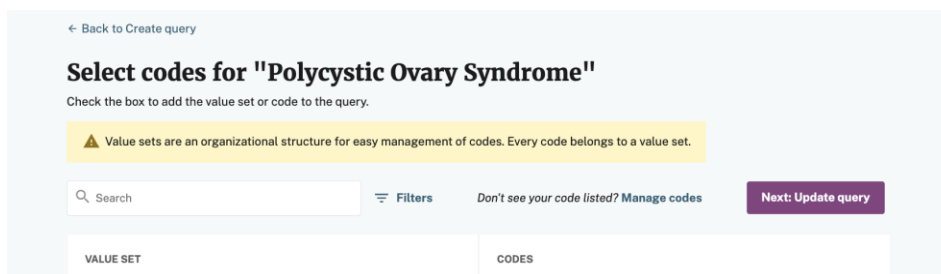
Customize query

Start from template(s)

Don't see what you're looking for? You can also [start from scratch](#).

Search condition or category

3. If your required codes aren't available, click the “Manage codes” link, which takes you to the Code library.



← Back to Create query

Select codes for "Polycystic Ovary Syndrome"

Check the box to add the value set or code to the query.

⚠ Value sets are an organizational structure for easy management of codes. Every code belongs to a value set.

Search Filters Don't see your code listed? [Manage codes](#) Next: Update query

VALUE SET	CODES
-----------	-------

4. Click the “Add value set” button to add the required codes.
5. Proceed with either CSV file upload or manual code entry.

3.3.1.2 Saving custom query

After clicking Save query, verify that:

1. A success message appears and updates to show the saved state.

The screenshot shows the 'Custom query' interface. At the top, there is a 'Back to condition selection' link. Below it, the 'Custom query' title is displayed. A 'Query name (required)' field contains 'Polycystic Ovary Syndrome'. To the right of this field is a 'Save query' button. Below the query name field, there are two tabs: 'TEMPLATES' and 'CUSTOM'. The 'CUSTOM' tab is active, showing a list of 'Additional codes from library'. A search bar is present with the text 'Search labs, medications, conditions'. To the right of the search bar is an 'Add from code library' button. Below the search bar, there is a 'Conditions' section with a 'Deselect All' button and an 'All dates' button. A list of conditions is shown, including 'PCOS Diagnostic Criteria' with author 'mario@dibbs.tools' and system 'http://hl7.org/fhir/sid/icd-10-cm'. At the bottom left, a green success message states 'Polycystic Ovary Syndrome successfully updated'.

2. The query “Polycystic Ovary Syndrome” is now available in the Query repository.

3.3.2 Audit Log (Admin/Super Admin)

Navigate to the Audit Log and verify that:

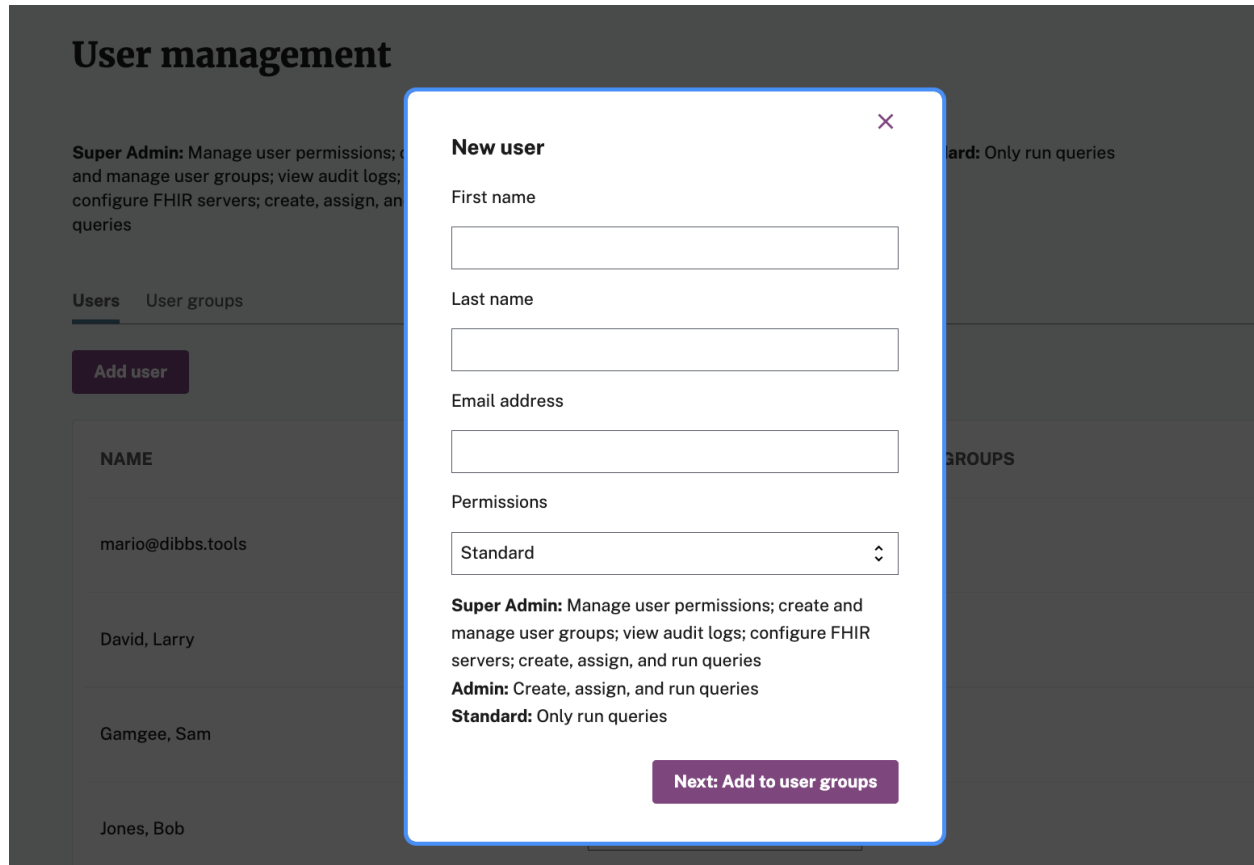
1. A new entry appears based on the PCOS query building you just performed.
2. Filtering by Name, Action, and Date range correctly narrows down the list to expected entries.
3. Log entries clearly showing who performed the action, what was done, and when it happened.

Audit Log			
Name(s)	Action(s)	Date range	
Mario	Custom value set saver	All dates	Search name, action, or message
NAME	ACTION	DATE	
Mario	Value set with name PCOS Diagnostic Criteria saved	4/16/2026, 7:33:43 AM	

3.3.3 Access management (Super Admin)

Navigate to User management to verify that you can do the following:

1. Add a user and assign permission levels (Standard, Admin, or Super Admin).



User management

Super Admin: Manage user permissions; create and manage user groups; view audit logs; configure FHIR servers; create, assign, and run queries

Users **User groups**

Add user

NAME

mario@dibbs.tools

David, Larry

Gamgee, Sam

Jones, Bob

GROUPS

Standard: Only run queries

New user

First name

Last name

Email address

Permissions

Standard

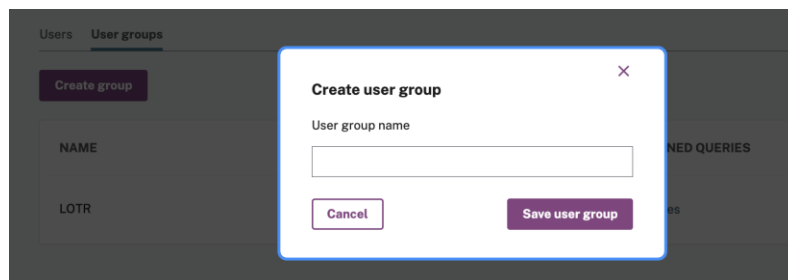
Super Admin: Manage user permissions; create and manage user groups; view audit logs; configure FHIR servers; create, assign, and run queries

Admin: Create, assign, and run queries

Standard: Only run queries

Next: Add to user groups

2. Create a new User group, modify its name, and add/remove members without errors.



Users **User groups**

Create group

NAME

LOTR

CREATE USER GROUP

Create user group

User group name

Cancel **Save user group**

3. Assign a specific query to a group and verify that members of that group can see and run it.



Query Connector

User management

Super Admin: Manage user permissions; create and manage user groups; view audit logs; configure FHIR servers; create, assign, and run queries

Admin: Create, assign, and run queries

Standard:

Users **User groups**

Create group

NAME	MEMBERS	ASSIGNED
Nintendo	1 member	1 query

Nintendo

Assigned Queries

Search queries

☐ Cancer case investigation

☐ Syphilis case investigation

☐ Gonorrhea case investigation

☐ Chlamydia case investigation

☐ test

☐ Newborn screening follow-up

☒ Polycystic Ovary Syndrome

☐ Combined query

☐ Oregon NBS followup - CH

☐ NewCancer2

3.3.4 FHIR server configuration (Super Admin)

Navigate to FHIR servers and verify that:

1. The target server (e.g., OpenEpic: eHealthExchange) is selectable from the list.

FHIR SERVER	URL	AUTH METHOD	STATUS
Aidbox DEFAULT	https://queryconnector.dev/aidboxone/fhir	SMART	✓ Connected (last checked: 4/16/2026, 1:10:05 PM)
CernerHelios: eHealthExchange	https://concept01.ehealthexchange.org:52780/fhirproxy/r4	none	✓ Connected (last checked: 1/14/2026, 2:10:32 PM)
HELIOS Meld: Direct	https://gw.interop.community/HeliosConnectathonSa/open	none	✓ Connected (last checked: 10/16/2025, 2:48:14 PM)
HELIOS Meld: eHealthExchange	https://concept01.ehealthexchange.org:52780/fhirproxy/r4	none	✓ Connected (last checked: 10/16/2025, 2:48:14 PM)
JMC Meld: Direct	https://gw.interop.community/JMCHeliosSTISandbox/open	none	✓ Connected (last checked: 10/16/2025, 2:48:14 PM)
JMC Meld: eHealthExchange	https://concept01.ehealthexchange.org:52780/fhirproxy/r4	none	✓ Connected (last checked: 10/16/2025, 2:48:14 PM)
Local e2e HAPI Server: Direct	http://hapi-fhir-server:8080/fhir	none	✗ Not connected (last checked: 3/13/2026, 3:50:08 PM)
OpenEpic: eHealthExchange	https://concept01.ehealthexchange.org:52780/fhirproxy/r4	none	✓ Connected (last checked: 4/16/2026, 2:43:59 PM) Edit
OPHDST Meld: Direct	https://gw.interop.community/CDCSepHL7Connectathon/open	none	✓ Connected (last checked: 10/16/2025, 2:48:14 PM)
Practice Fusion Sandbox	https://qa-api.practicefusion.com/fhir/r4/v1/01f68a7a-98f8-434a-8959-98e6fce776d0	SMART	✓ Connected (last checked: 4/3/2026, 11:25:20 AM)
Public HAPI: Direct	https://hapi.fhir.org/baseR4	none	✓ Connected (last checked: 3/6/2026, 11:55:35 AM)

2. OpenEpic: eHealthExchange server is successfully connected after testing the connection.



Edit server

Server name (required)

OpenEpic: eHealthExchange

URL (required)

https://concept01.ehealthexchange.org:52780/fhirproxy/r4

Auth Method

None

Patient \$match settings

☐ Enable patient matching

Number of maximum patient matches to return. If 0, the server decides how many matches to return.

0

Custom Headers

Add custom HTTP headers to be sent with every request to this FHIR server. Note: Authorization header is managed by the Auth Method above.

Accept

application/json, application/



Accept-Encoding

gzip, deflate, br



Content-Type

application/fhir+json; charset



X-DESTINATION

OpenEpic



X-POU

PUBHLTH



prefer

return=representation



Cache-Control

no-cache



+ Add header

☒ Disable certificate validation

☐ Default server?

Delete

Cancel

✓ Success

Save changes



3.4 End-to-End “Run a Query” testing

3.4.1 Enter patient information and select FHIR server

On the Enter patient information page, verify the following:

1. Input the following test patient data:
 - a. First/Last Name: Camila Lopez
 - b. DOB: 09/12/1987
 - c. MRN: 203713
2. Under Advanced, verify that the Healthcare Organization (HCO) field is set to the correct test server: OpenEpic: eHealthExchange
3. Then click “Search for patient.”

1 of 4 Enter patient information

Enter patient information below to search for a patient. We will query the connected network to find matching records.

The demo site uses synthetic data to provide examples of possible queries that you can make with the Query Connector. To proceed, click “fill fields” below.

[Fill fields](#) [Advanced](#)

Advanced

Healthcare Organization (HCO)
OpenEpic: eHealthExchange

Name

First name: Camila
Last name: Lopez

Date of Birth

Date of Birth
mm/dd/yyyy

Phone number

Phone number

Email address

Email address

Address

Street address

Address line 2

City: State: Zip code:
Select a state

Medical Record Number (MRN)

Medical Record Number
203713

[Search for patient](#)

3.4.2 Select your patient

On the Select a patient page, verify that:



1. Matching patient appears for the known test patient: Camila Maria Lopez
2. Selecting the patient works and advances you to query selection

2 of 4 Select a patient

The following record(s) match.

NAME	DOB	CONTACT	ADDRESS	MRN	ACTIONS
Camila Maria Lopez	1987-09-12	work: +1 469-888-8888 mobile: +1 469-469-4321 knixontestemail@epic.com	3268 West Johnson St. Apt 117 GARLAND, TX 75043		Select patient

Note: If you see, “No results,” click “Return to Enter patient info” to go back to the Patient Information page. Reinput data, making sure you have set the test server as OpenEpic: eHealthExchange.

3.4.3 Select your query

Verify the following:

1. On the Select a query page, select “Polycystic Ovary Syndrome” and click “Submit.”

[← Return to Select patient](#)

3 of 4 Select a query

We will pull relevant data for your selected patient and query.

 Don't see the query you're looking for?
Go to the [query repository](#) to build it.

Query

Polycystic Ovary Syndrome

[Advanced...](#)

Submit

3.4.4 View results

On the Patient Record page, verify that:



1. Results load successfully
2. Sidebar navigation works
3. The following sections appear: Patient Info, Conditions

← Return to Select query New patient search

4 of 4 Patient Record
Query: Polycystic Ovary Syndrome View FHIR response

Patient Info	Patient Info ^
Demographics	
Conditions	

Demographics	
Patient Name	Camila Maria Lopez
DOB	09/12/1987

4. View FHIR response works and loads the full JSON bundle

Full FHIR response Copy response ✕

```
{
  "Patient": [
    {
      "resourceType": "Patient",
      "id": "erXuFYUfucBZaryVksYEcMg3",
      "extension": [
        {
          "valueCodeableConcept": {
            "coding": [
              {
                "system": "urn:oid:1.2.840.114350.1.13.0.1.7.10.698084.130.657370.19999000",
                "code": "female",
                "display": "female"
              }
            ]
          }
        }
      ]
    }
  ]
}
```

3.5 Wrapping Up

Congratulations on completing the Query Connector UAT! This process confirms the tool is performing as expected.

If you have any questions or want to chat with us directly, please reach out at dibbs@cdc.gov.