ONC Tech Forum

Strategies and Challenges When Registering a FHIR Application
September 9, 2022

Liz Turi, ONC
Brian Beahan, patientlink
Jennifer Blumenthal, OneRecord
Danielle Friend, Epic
Jordan Jones, Greenway Health
Agenda

- Introductions
- Panel Discussion
- Chat Q&A
MyLinks
Linking Us Together for Better Care
www.MyLinks.com
How You Can Get Your Health Data

1. CREATE A MYLINKS ACCOUNT
2. FIND YOUR PROVIDER
3. AUTHENTICATE USING PATIENT PORTAL
4. REVIEW YOUR DATA
# All Your Records in One Place

## Health Record for Janet Sanderson

### Conditions
- Insomnia unspecified
- Angina Pectoris benign
- Essential hypertension

### Labs
- **07/29/2019**
  - Carbon Dioxide, Total: 22.0 mmol/L
  - Chloride: 103.0 mmol/L
  - Potassium: 4.8 mmol/L
  - Sodium: 140.0 mmol/L
  - BUN/Creatinine Ratio: 12.6 mg/dL

### Medications
- Candesartan Cilexetil 4 MG Oral Tablet
- Ambien 10 MG Oral Tablet
- Cyanocobalamin 1000 MCG/ML Injection Solution
- Atenolol 25 MG Oral Tablet

### Social History
- Alcohol consumption: Active
- Tobacco smoking status: Final

### Allergies
- 12/07/2019: Penicillins
- 07/24/2019: Sulfa Drugs

### Immunizations
- Influenza, injectable, quadrivalent, contains preservative
- DTaP

### Procedures
- 12/07/2019: Card Nuclear Exercise Stress Treadmill
- 08/01/2019: XR Chest 2 Views

### Vital Signs
- 12/07/2019: Blood Pressure 140/90 mmHg
- 12/07/2019: Heart rate 66.0 (beats/min)
THANK YOU

MyLinks
Linking Us Together for Better Care

Office of the National Coordinator for Health Information Technology

www.MyLinks.com
Jennifer Blumenthal, OneRecord
Hi, we’re OneRecord

We started OneRecord to end the frustrating search for our information when it comes to our most precious asset – our health.

Vision and Mission

To empower consumers with their healthcare data at their fingertips.

Lean product-focused team

Industry Leadership
At OneRecord, we have focused on one mission: To give power to the patient. We started with an medical records and we haven’t stopped since.
Find Your Medical Records

Your health records in one place

Find your hospitals
Search for records from anywhere you have received care.

Get your data
Build one consolidated health record — your OneRecord.

Share your records
Easily share your full medical history with your care team and loved ones.

Access your records across the nation

Get your records to who matters

It's your health. Own it.
Start building your OneRecord today.

[Icons for Google Play and App Store]
A Sampling of OneRecord’s EHR Vendor and Provider FHIR Connections
(40,000+ Facilities to date)

<table>
<thead>
<tr>
<th>EHR Vendors</th>
<th>IDNs and Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epic</td>
<td>Mass General Brigham</td>
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<tr>
<td>Allscripts</td>
<td>NewYork-Presbyterian</td>
</tr>
<tr>
<td>MEDITECH</td>
<td>NYU Langone Medical Center</td>
</tr>
<tr>
<td>eClinicalWorks</td>
<td>Kaiser Permanente</td>
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<tr>
<td>MEDHOST</td>
<td>Northwell Health</td>
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<tr>
<td>cpsi</td>
<td>Trinity Health</td>
</tr>
<tr>
<td>drchrono</td>
<td>Montefiore</td>
</tr>
</tbody>
</table>

EHR Vendors and Provider FHIR Connections:

- Epic
- Allscripts
- MEDITECH
- eClinicalWorks
- MEDHOST
- cpsi
- drchrono
A Sampling of OneRecord’s Health Plan FHIR Connections (285 Health Plans to date)

<table>
<thead>
<tr>
<th>3rd party vendors</th>
<th>Health Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>inovalon</td>
<td>aetna</td>
</tr>
<tr>
<td>InterSystems</td>
<td>Cigna</td>
</tr>
<tr>
<td>Smile CDR</td>
<td>UPMC Health Plan</td>
</tr>
<tr>
<td>CAHPS Edifeccs</td>
<td>Changing Health Plans</td>
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<tr>
<td>CAHPS Geisinger</td>
<td>Health Plan</td>
</tr>
<tr>
<td>CAHPS Kaiser Permanente</td>
<td>Health Plan</td>
</tr>
<tr>
<td>CAHPS 1upHealth</td>
<td>Blue Cross of Idaho</td>
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<tr>
<td>CAHPS Innovaccer</td>
<td>California Blue</td>
</tr>
<tr>
<td>CAHPS Florida Blue</td>
<td>Blue Cross</td>
</tr>
<tr>
<td>CAHPS Highmark Health</td>
<td>United Healthcare</td>
</tr>
<tr>
<td>CAHPS Healthfirst</td>
<td>Security Health Plan</td>
</tr>
</tbody>
</table>
Cures Act | Intent vs Implementation: An App Perspective

**Expectation**

**Step 1**
- Register
  - Quick Search on Google
  - Clear link to developer portal/registration on marketing website

**Step 2**
- Connect
  - Review Documentation
  - Retrieve Client ID and Client Secret

**Step 3**
- Test
  - Test Sandbox in Postman
  - Data Analysis

**Step 4**
- Go Live
  - Test Production in App Preprod
  - Promote to Production
Cures Act | Intent vs Implementation: An App Perspective

Reality

Rinse and Repeat

- ✓ Create an Account as the developer
- ✓ Register OneRecord application on portal
- ✓ Approval - Issuance of ClientID and Secret
- ✓ Test sandbox connection in Postman (if available)
- ✓ Cycle of fix and test
- ✓ Prep SANDBOX entry for directory load
- ✓ Review and approve SANDBOX directory entry

- ✓ Load SANDBOX directory entry
- ✓ Test SANDBOX data
- ✓ Track down data issues
- ✓ Report on data issues
- ✓ Cycle of fix and test
- ✓ Prep PRODUCTION entry for directory load
- ✓ Review and approve PRODUCTION directory entry
- ✓ Load PRODUCTION directory entry
<table>
<thead>
<tr>
<th>Vendor</th>
<th>Common FHIR URL</th>
<th>Common Client ID/Secret</th>
<th>Requires Whitelisting</th>
<th>Effort Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor 1</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Easiest</td>
</tr>
<tr>
<td>Vendor 2</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Easiest</td>
</tr>
<tr>
<td>Vendor 3</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Easiest</td>
</tr>
<tr>
<td>Vendor 4</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Easiest</td>
</tr>
<tr>
<td>Vendor 5</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Easy</td>
</tr>
<tr>
<td>Vendor 6</td>
<td>No</td>
<td>Yes &amp; No</td>
<td>Yes &amp; No</td>
<td>Medium</td>
</tr>
<tr>
<td>Vendor 7</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Hard</td>
</tr>
<tr>
<td>Vendor 8</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Hard</td>
</tr>
<tr>
<td>Vendor 9</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Hardest</td>
</tr>
<tr>
<td>Vendor 10</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Hardest</td>
</tr>
</tbody>
</table>
A number of EHRs don’t have their Patient Access APIs ready yet. We have heard from many that they are in the process of development, but there are others for which we can’t find any information and they ignore our emails AND LinkedIn messages.

Reasons Given:

- No Apps Requested
- FHIR Server not ready
- Ran into problems
Cures Act | Intent vs Implementation: An App Perspective

Registration

Primary barriers:

- Can’t find how to register
- Bugs in registration process
- Making apps re-register when bugs are fixed
- Too much ‘vetting’ of the app

Keys to success:

- Dynamic registration!
- Automated process
Connection

Primary barriers:
- No test environment
- No 3-Legged OAUTH 2.0
- Deviating from the Smart App Launch Framework

Keys to success:
- Great documentation
- Test environment
- Test patients
Testing

Primary barriers:

▷ Lack of test data
▷ Long turnaround time on issue resolution

Keys to success:

▷ Test servers with de-identified production data
▷ Provider self-testing against our pre-production environments
Support

**Primary barriers:**
- Having to find someone to talk to in order to answer questions
- No documentation
- Not test environment or test data

**Keys to success:**
- Dedicated resources for resolving issues
- Excellent documentation
Danielle Friend, Epic
FHIR App Registration

Epic Intro

Danielle Friend
Epic’s FHIR Roles

**EHR**

- FHIR API & OAuth Endpoints
- DSTU2, STU3, & R4
- First FHIR support released in 2015
- Additionally supports:
  - SMART on FHIR
  - CDS Hooks
  - Bulk FHIR
  - FHIRcast

**Patient Portal**

- FHIR Client
- Connects to other EHRs for patient-mediated FHIR data
- DSTU2
- R4 support in development
USAGE OF FHIR

99% of US health systems* using Epic are live on R4

*Health systems participating in CMS incentive programs

39 Billion FHIR API requests in the last year

12 Billion in 2021
When everyone's on the same page, technology can make cool things happen. Epic is a strong supporter of the HL7® FHIR® standard as the future of REST-based interoperability. In addition to participating in the standards development process with HL7, Epic is also a member of the Argonaut Project and the Da Vinci Project, each aimed at accelerating the adoption of FHIR.

Epic's work with FHIR means that any health system, hospital, or clinic that uses Epic's comprehensive health record system can connect to any app that also supports FHIR to exchange health information, including but not limited to the U.S. Core Data for Interoperability – or USCDI - data classes and elements.

Sign Up to Access

Epic on FHIR is a free resource for developers who create apps for use by patients and healthcare organizations.

Summary of Resources

- **AdverseEvent**
  - Read, Search — R4
- **AllergyIntolerance**
  - Read, Search, Create — R4
  - Read, Search — DSTU3
  - Read, Search — DSTU2
- **Appointment**
- **Condition (Problems)**
  - Read, Search, Create — R4
  - Create — DSTU3
  - Read, Search — DSTU2
  - Create — COG Hooks — R4
- **Condition (Reason for Visit)**
  - Read, Search — R4
- **Flag (Isolation)**
  - Read, Search — R4
- **Flag (Patient FYI)**
  - Read, Search — R4
  - Read, Search — DSTU3
  - Read, Search — DSTU2
- **Goal (Care Plan)**
  - Read, Search — R4
- **Observation (Social History)**
  - Read, Search — R4
  - Read, Search, Search — DSTU3
  - Read, Search — DSTU2
- **Observation (Vitals)**
  - Read, Search, Create — R4
  - Read, Search — DSTU2
Registering an App

1. Create an App
   - On Fhir.epic.com
   - With information such as:
     - API scopes
     - Redirect URIs
     - Client credentials
     - Optional data use info

2. Test your App
   - Test APIs with the sandbox.
   - Discover health system FHIR endpoints.

3. Patient chooses App
   - Your USCDlv1 App is automatically available in each US health system.
   - Patient authenticates your app via MyChart login.
Jordan Jones, Greenway Health
Who Am I?
FHIR Support

/CareTeam

YOUR REQUEST HISTORY

0 Calls 7 Days

Your API calls will appear here. Make a request to get started!

QUERY PARAMS

- **_content** string
  - Search the contents of the resource's data using a fulltext search

- **_filter** string
  - Search the contents of the resource's data using a filter

- **_has** string
  - Return resources linked to by the given target

- **_id** string
  - The ID of the resource

- **_language** string
  - The language of the resource
## FHIR Support

### Greenway AppGallery

**Explore Apps from our Partners**

<table>
<thead>
<tr>
<th>Categories</th>
<th>All Apps (18 out of 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care Coordination</td>
<td>TupHealth - Aggregated Pati... by Developers Sharan test</td>
</tr>
<tr>
<td>Clinical Research</td>
<td>AppScript on FHIR by Developers Sharan test</td>
</tr>
<tr>
<td>Data Visualization</td>
<td>Digital health applications have shown increasing cli...</td>
</tr>
<tr>
<td>Disease Management</td>
<td>Salesforce Health Cloud Inte... by Developers Sharan test</td>
</tr>
<tr>
<td>Genomics</td>
<td>In this demo, we show how SMART on FHIR can be leverage...</td>
</tr>
<tr>
<td>Medication</td>
<td>TestApp_Authentication by Developers Diksha Bajpai</td>
</tr>
<tr>
<td>Patient Engagement</td>
<td>PatientWisdom by Developers Sharan test</td>
</tr>
<tr>
<td>Population Health</td>
<td>Humanizing the experience and delivery of care has nieve...</td>
</tr>
<tr>
<td>Registries and Case Reporting</td>
<td>OneRecord by Developers Sharan test</td>
</tr>
<tr>
<td>Remote Patient Monitoring</td>
<td>OneRecord is a cross-device platform that enables patie...</td>
</tr>
<tr>
<td>Risk Calculation</td>
<td>More Information</td>
</tr>
<tr>
<td>COVID-10</td>
<td>More Information</td>
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Panel Discussion
Contact ONC

Add additional call to action or relevant speaker information and contact details.

Phone: 202-690-7151

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