

# Leveraging FHIR capabilities to enable Patient Access and Provider Directory APIs to meet CMS guidelines

Caitlin Voegele – Microsoft



HL7 FHIR DevDays 2021, Virtual Edition, June 7–10, 2021 | @HL7 | @FirelyTeam | #fhirdevdays | [www.devdays.com](http://www.devdays.com)

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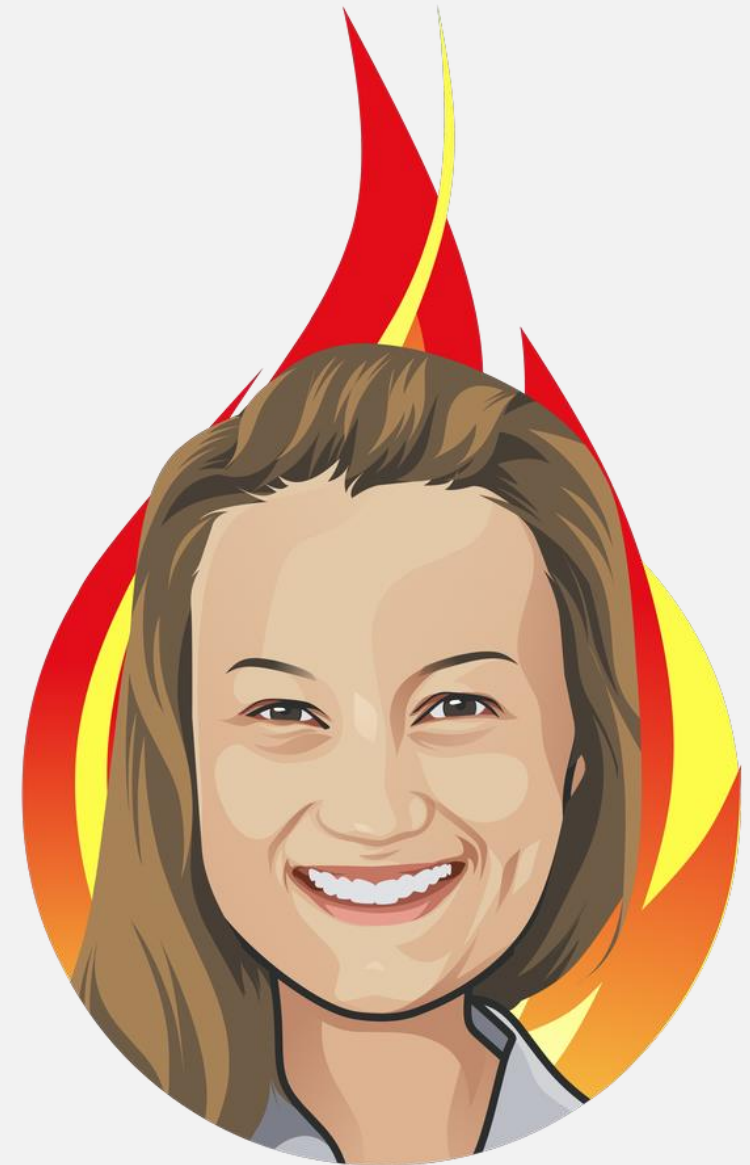


## Who am I?

Caitlin Voegele

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# Learning Objectives Tutorial

- Overview of the CMS mandate
- Understanding the high-level FHIR server requirements
- Detailed demos of FHIR functionality
  - \$validate
  - Defining custom search parameters
  - \$member-match
  - Patient-everything
  - Additional searches
  - \$convert

# CMS Interoperability & Patient Access Overview

# FHIR: The catalyst of health data in the cloud

## ONC's 21<sup>st</sup> Century Cures Act Published

- Drive electronic access, exchange and use of health information
- Breaking down barriers to information sharing and interoperability

## Patient Access & Provider Directory APIs

- Patients can access claims, cost & encounter info
- Provider directory info publicly available
- Third-party applications to offer choice to patients & clinicians

## Proposed Interoperability & Authorization Rule

- Payer to Payer API
- Payer-to-Payer Data Exchange at Enrollment
- Provider Access API
- Documentation Requirement Lookup Service (DRLS) API
- Prior Authorization Support (PAS) API

2016

May 2020

July 1, 2021

January 1, 2022

January 1, 2023

## CMS Interoperability & Patient Access Final Rule

- Requires CMS regulated payers to ensure patients have access to their data
- Standardizing the use of APIs using **FHIR R4**

## Payor to Payor Data Exchange

- Exchange patient clinical data at their request with other payers
- Usage of FHIR is encouraged

## July 1<sup>st</sup> Deadline

### Patient Access API

- CMS-regulated payers required to implement and maintain a secure, standards-based API that allows patients to easily access their claims and encounter information, including cost, as well as a defined sub-set of their clinical information through third-party applications of their choice.

### Provider Directory API

- CMS-regulated payers are required to make provider directory information publicly available via a standards-based API.
- Through making this information available, third-party application developers will be able to create services that help patients find providers for specific care needs and clinicians find other providers for care coordination.

# Dev Days Sessions

## Monday

- Argonaut: USCDI + US Core
- FHIRside Chat Da Vinci
- Clinical and Claims Data Transformation utilizing FHIR Bulk Data
- CMS: Provider API

## Tuesday

- Meet & Greet the ONC Panelists
- Advancing and Implementing Consumer Directed Health Information Exchange with the CARIN Alliance

## Wednesday

- Expanding Payer-Provider Landscape in FHIR
- Developing Patient Access APIs at scale
- Panel: State Implementation of Patient Access API

## Thursday

- Accelerate Quality: Building FHIR that Meets Federal Mandates
- Let's Build! Da Vinci Implementer Tools
- CMS: Data at the Point of Care
- Implementing Provider Directory APIs

# FHIR Requirements



# High Level FHIR Requirements for CMS

- FHIR R4
- Dynamic Capability Statement
- RESTful Interactions
- Implementation Guides
- Profiles/Extensions
- Search
- Operations
- SMART on FHIR

## Implementation Guides

CARIN IG for Blue  
Button®

HL7 FHIR Da Vinci  
PDex IG

HL7 US Core IG

HL7 FHIR Da Vinci  
- PDex US Drug  
Formulary IG

HL7 Da Vinci  
PDex Plan  
Network IG

# FHIR Functionality Demos

## Storing and validating profiles

Profiles allow users to further restrict and extend resources based on a specific context.

\$validate allows you to verify if a resource conforms to the base specification or a specific profile

**GET <FHIR URL>/Patient/<PATIENT ID>/\$validate?\_profile=<PROFILE URL>**

## Defining & indexing search parameters

Users may need to define search parameters that aren't defined by the base FHIR specification.

Examples:

- A payer wants to be able to include the insurer associated with an ExplanationOfBenefit resource
- A provider wants to be able to search on demographic information like race and ethnicity to understand outcome differences within these groups.

**POST <FHIR URL>/SearchParameter**

**{BODY... }**

## patient-everything

The [patient-everything operation](#) allows you to get all data related to a patient: **GET <FHIR URL>/Patient/<PATIENT ID>/\$everything**

This implementation of patient-everything takes on the following parameters:

- Start
- End
- \_since
- \_type

## \$member-match

- The \$member-match operation allows a patient's new payer to get their unique identifier from their old payer to assist in payer-to-payer exchange: **GET <FHIR URL>/Patient/\$member-match**
- Input: 1) Patient 2) Old Coverage 3) New Coverage\*
- Output: 1) Patient with updated identifier section 2) Old Coverage

\* In our implementation of \$member-match we do not use New Coverage

## Additional search requirements

- `_profile`: **GET**  
`{fhirurl}/Patient?_profile=http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient`
- `_include/_revinclude`: **GET**  
`{fhirurl}/ExplanationOfBenefit?_include=ExplanationOfBenefit:patient`
- Chained search: **GET** `{{fhirurl}}/Coverage?patient.name=Appleseed`



## \$convert-data

Within the Payer Data Exchange IG, users are ensuring that customers have access to their clinical data. Some of this is available in FHIR format, but some may come in as HL7 v2 messages or C-CDA documents.

\$convert-data allows users to convert data by defining templates and passing in the non-FHIR data to get a FHIR bundle back.

**POST {{fhirurl}}/\$convert-data**

# Touchstone

## Test Execution

Execute Again

**Exec Id:** 202105211916461053893728  
**Start Time:** 05/21/2021 04:16:46PM  
**End Time:** 05/21/2021 04:17:01PM  
**Status:** Passed <sup>w</sup>  
**Duration:** 15.480s  
**Test Scripts:** 1

**Test Setup:** FHIRSandbox-CARIN-CARIN-4-BlueButton-00-Capability--All  
**Executed By:** Caitlin E Voegele  
**Organization:** HLSCD PM  
**Origin:** TouchstoneFHIR  
**Destination:** HLSCD PM - Caitlin May <sup>c</sup> <https://caitlinmay.azurewebsites.net>  
**Validator:** FHIR 4.0.1



Test Script Execution	Version	Latest	Description	Origin	Destination	Status	Start	End	Duration	Passed	Tests
<a href="#">/FHIRSandbox/CARIN/CARIN-4-BlueButton/00-Capability/carin-bb-00-Capability-json</a>	4	4	Test a single server to verify support for the capabilities interaction 'HTTP GET metadata' and the return of a valid CapabilityStatement resource supporting the CARIN for BB IG Consumer Application Implementation Guide Version: 1.0.0 capabilities using JSON syntax.	TouchstoneFHIR	HLSCD PM - Caitlin May <sup>c</sup> <a href="https://caitlinmay.azurewebsites.net">https://caitlinmay.azurewebsites.net</a>	Passed <sup>w</sup>	05/21/2021 04:16:46PM	05/21/2021 04:17:01PM	15.382s	1 of 1	<div style="width: 100%; height: 10px; background-color: green;"></div>

[fhir-server/docs/rest at main · microsoft/fhir-server \(github.com\)](https://github.com/microsoft/fhir-server)

## What did you learn?

- Overview of CMS Timeline
- Implementation guides in CMS
- Using FHIR features to get FHIR server ready for this mandate
  - \$validate
  - Defining & indexing search parameters
  - \$convert-data
  - \$member-match
  - Advanced searching

## Contact

- During DevDays, you can find / reach me here:
  - Via Whova App – Speaker’s Gallery
  - Email: [cavoeg@Microsoft.com](mailto:cavoeg@Microsoft.com)

# Resources

- [Deploy FHIR Server](#)
- [USCore Patient Profile](#)
- [US Core Race Extension](#)
- [ExplanationOfBenefit Type Example](#)
- [US Core Race Search Parameter](#)
- [Patient-everything operation](#)
- [Touchstone](#)
- [Sample rest files for testing](#)
- [Storing & Validating Profiles](#)
- [Custom Search Documentation](#)
- [Reindex Documentation](#)
- [\\$patient-everything](#)
- [\\$member-match operation](#)
- [\\$convert operation](#)
- [Tutorial - Centers for Medicare and Medicaid Services \(CMS\) introduction - Azure API for FHIR | Microsoft Docs](#)

# Q&A

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