

Implementing Patient Access APIs

Himanshu Chavda, Google Cloud Healthcare



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Who am I?



Himanshu Chavda
Customer Engineer
Google Cloud
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Presentation

- In this session I will present the end-end architecture and an implementation pattern for Health Plan Patient Access APIs on Google Cloud to meet the CMS/ONC mandates on data interoperability.
- Key topics include:
 - CARIN BB and US Core Implementation Guides
 - Transforming CPCDS / CDA data to FHIR
 - Enabling API access to member data from Smart on FHIR apps
 - Consent management, provenance, and third-party app developer experience

Patient Access API - Overview

CMS Rule Requires [\(p54\)](#)

*Each MA organization, Medicaid FFS program, Medicaid managed care plan, CHIP FFS program, CHIP managed care entity, and QHP issuer on an (FFE) Federally Funded Exchange to **implement, test, and monitor** a standards-based API that is accessible to third-party applications and developers*

Patient Access API

Patient Access API - What Data Is Supported?

Scope of Patient Access API Data Model Defined by CMS rules

- Adjudicated claims
- Encounters with capitated providers
- Provider remittances
- Enrollee cost sharing
- Clinical data (including labs)
- Formularies (Part D MA plans)
- Preferred drug lists (Medicaid & CHIP)

Data Longevity

Going back to January
1st 2016



Claims/Encounters

CARIN BB/CPCDS IG 1.0.0-STU

- 9 FHIR Profiles
- 40 Value Sets
- 29 Code Systems
- No Concept Maps
- No Resource Extensions

Clinical

US Core R4 IG 3.1.1-STU

- 26 FHIR Profiles
- 31 Value Sets
- 5 Code Systems
- 1 Concept Map
- 4 Resource Extensions

Formulary/Coverage

DaVinci PDEX Formulary 1.0.1-STU

- 2 FHIR Profiles
- 4 Value Sets
- 4 Code Systems
- No Concept Maps
- 13 Resource Extensions

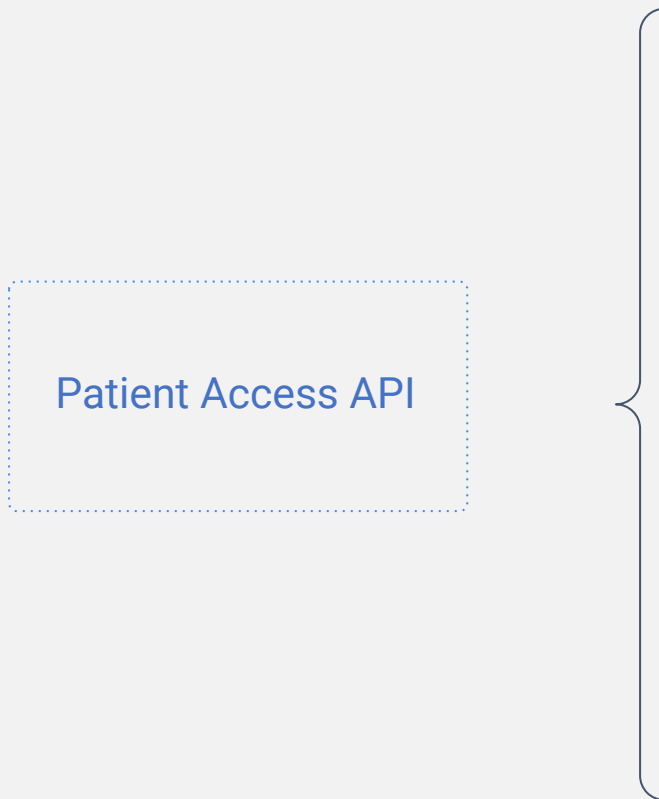


FHIR Data Model For: Patient Access API



Patient Access API



What are we going to cover today...

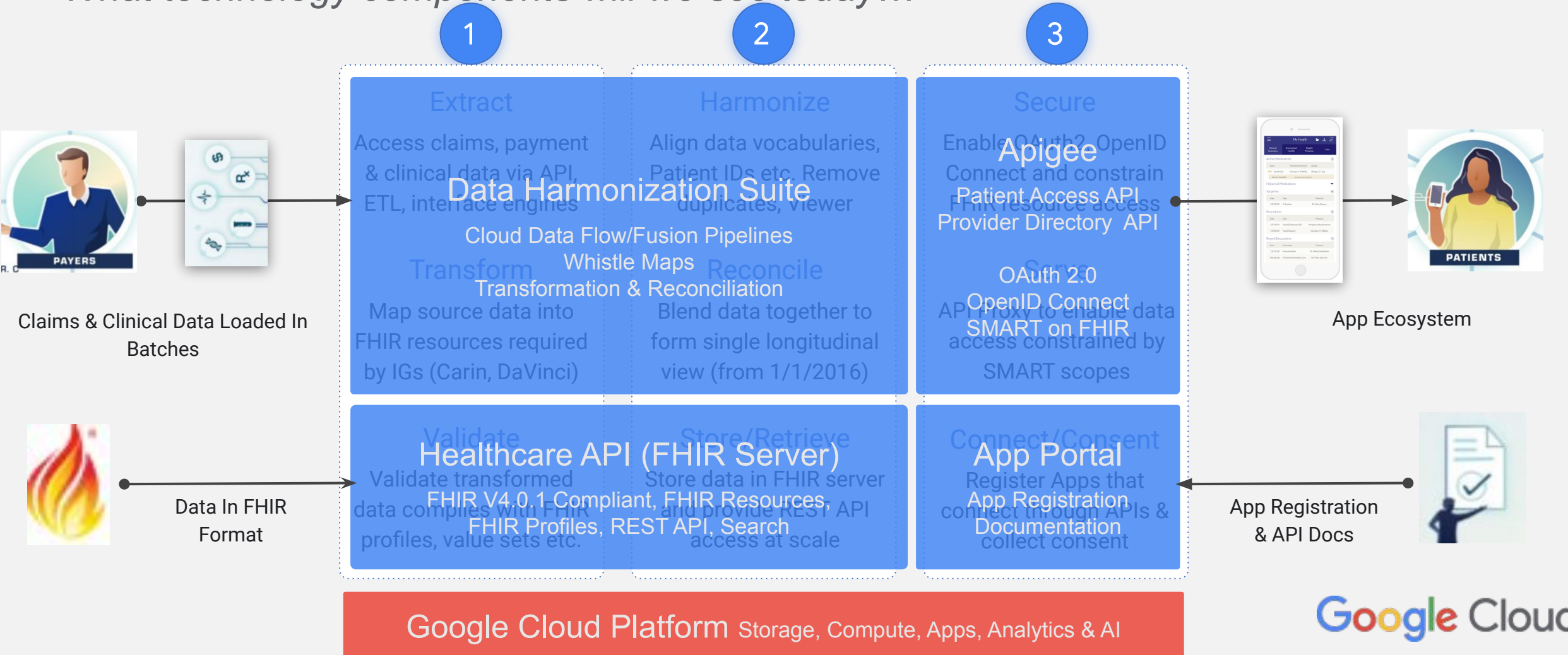


1. Patient Access API - FHIR Resources
 - a. IGs in FHIR Viewer
 - b. FHIR Resources
2. Data Harmonization
 - a. The data backend
 - b. Running data pipeline
 - c. Mapping data to FHIR
3. 3rd Party App Interactions
 - a. Registration Request
 - b. Connection details
 - c. Approval

Healthcare Data Cloud - Solution Architecture

What technology components will we see today...

 Healthcare Products
 Cloud Platform



1 - FHIR Server setup - Implementation Guide

The screenshot shows the 'FHIR store explorer' interface. On the left is a navigation sidebar with 'Healthcare' selected. The main area has a dropdown for 'FHIR Store *' set to 'final-fhir-store'. Below this is a section titled 'FHIR store Details' containing a list of implementation guides: USCore_3.1.1, USCore_3.1.0, DaVinciPayerDataExchange, DaVinciPDEXPlanNet, Formulary, and CARINConsumerDirectedPayerDataExchange. At the bottom, there is a 'Resource Types' section with a toggle for 'Only show pinned resource types' and a filter section.

Healthcare

FHIR store explorer

FHIR Store *
final-fhir-store

FHIR store Details

- Implementation guide
- USCore_3.1.1
- USCore_3.1.0
- DaVinciPayerDataExchange
- DaVinciPDEXPlanNet
- Formulary
- CARINConsumerDirectedPayerDataExchange

Resource Types Only show pinned resource types

Filter Resource type:

FHIR viewer **PREVIEW**

Google Cloud

1 - FHIR Resource - Implementation Guide

← Patient
📌 🔍

Filter Type to filter
🔍 ☰

Last updated ↑	Identifiers	Given Name	Family Name	Gender	Birth Date	
May 27, 2021, 4:00:49 PM	MB : 5b936888-c1d9-4595-be3a-8c5945d7f6bd	Florentino8	Leuschke194	male	2014-0...	▼
May 27, 2021, 4:00:44 PM	MB : d1a20a16-299d-4b84-b6f4-391761cb4227	Rosella686	Will178	female	1985-0...	▼
May 27, 2021, 4:00:32 PM	MB : 794b7c1a-e5db-4c02-9b7a-b644285dac0f	Hal307	Mann644	male	2012-0...	▼
May 27, 2021, 4:00:23 PM	MB : 480d6ba6-3745-4de0-9652-bc370ffbc91	Armando772	Abrego412	male	2016-1...	▼
May 27, 2021, 4:00:19 PM	MB : ee322fb8-ca15-4d85-94b0-00023e2e8d1d	Toney527	Osinski784	male	1972-0...	▼
May 19, 2021, 10:15:43 PM	MR : 8fb9d749-1287-425d-af7b-88b57277868e	Patient	HealthAPIx	—	—	▼
May 10, 2021, 5:04:26 PM	value : ff00faab-23c5-f76b-b7af-92c910f1352a	Jaime666	M◆◆rquez847	male	1944-0...	▼
May 10, 2021, 4:33:55 PM	MB : af37b759-0223-4bfa-a7f2-e7ccf4d4654b	Sona831	Nader710	female	2007-0...	▼
May 10, 2021, 4:33:54 PM	MB : d9bc35fb-f0b4-42e1-a02e-bf5b37dcd134	Carlton317	Sporer811	male	1987-0...	▼
May 10, 2021, 4:33:54 PM	MB : 3d416320-fd19-460d-9ec8-84a13c665058	Nicholle822	Harvey63	female	1952-0...	▼
May 10, 2021, 4:33:53 PM	MB : 3941df4a-44e3-4a02-b964-ab475b9d71ae	Armand155	Mayer370	male	1972-1...	▼
May 10, 2021, 4:33:52 PM	MB : 474ed450-98ae-452a-8306-f95deb43123f	Yolanda648	Luevano912	female	1988-0...	▼
May 7, 2021, 2:18:44 PM	MB : 7641f997-65be-9bfa-e726-6c09f1dfd449	Elvira561	Rinc◆◆n417	female	1973-0...	▼
May 7, 2021, 2:18:41 PM	MB : 6d7b1a23-05ce-e9e6-9d4e-3ddeba2bbaac	Jessica140	Moscisci958	female	1974-0...	▼
Apr 19, 2021, 8:12:04 PM	value : c75d2521-e190-efdb-d8f1-e0a51a0fbfc4	Brenna468	Marks830	female	1951-1...	▼

Rows per page: 50 ▼ 1 – 15 of 15 < >

FHIR viewer PREVIEW RECENTLY VIEWED

Patient/5601f4fc277fd137d9107f06be692181

MB : 5b936888-c1d9-4595-be3a-8c5945d7f6bd PT : 5b936888-c1d9-4595-be3a-8c5945d7f6bd

MR : 5b936888-c1d9-4595-be3a-8c5945d7f6bd

OVERVIEW ELEMENTS JSON

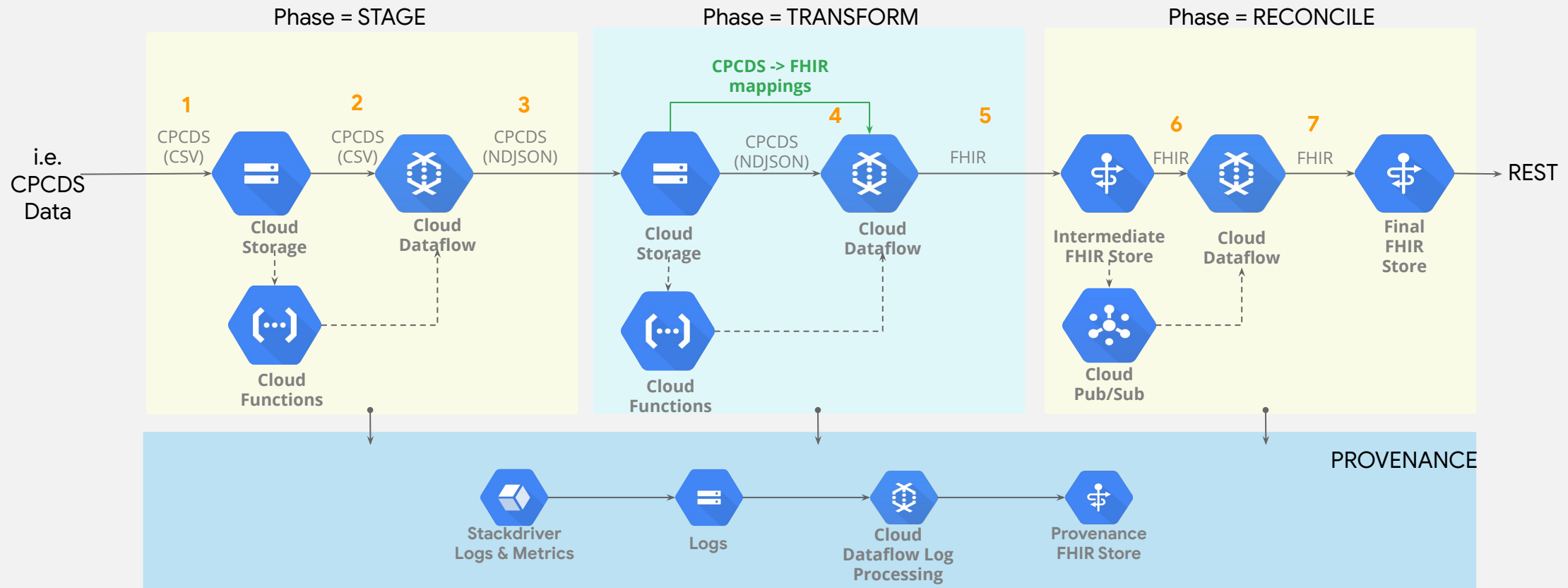
```

79     },
80     "value": "5b936888-c1d9-4595-be3a-8c5945d7f6bd"
81   }
82 }
83   "meta": {
84     "lastUpdated": "2021-05-27T23:00:49.159554+00:00",
85     "profile": [
86       "http://hl7.org/fhir/us/carín-bb/StructureDefinition/C4BB-Patient|1.0.0",
87       "http://hl7.org/fhir/us/carín/StructureDefinition/carín-bb-patient",
88       "http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient|3.1.1"
89     ],
90     "source": "dphpd11",
91     "versionId": "MTYyMjE1NjQ0TE10TU1NDAwMA"
92   },
93   "name": [
94     {
95       "family": "Leuschke194",
96       "given": [
97         "Florentino8"
98       ],
99       "text": "Florentino8 Leuschke194"
100     }
101   ],

```

2 - Healthcare Data Cloud Solution - Data Harmonization

The Data Journey From Source Format To FHIR...



3 - Third Party Application Interactions

- 1 Login to Google Application Portal as a 3rd party app provider
- 2 Start the application registration
 - *End user (member facing)*
 - *Back end (payer to payer)*
- 3 Select the SMART scopes/resources
 - *Patient*
 - *EOB*
 - *Coverage*
 - *Organization*
- 4 Registration approval
 - *Automatic approval*
 - *Manual approval (if required)*

Contact

- During DevDays, you can find / reach me here:
 - Via Whova App – Speaker’s Gallery
 - Zulip Chat
 - Email: hchavda@google.com

Q&A

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