# FHIR: Building a Facade API

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An interoperability project focused on building services for sharing healthcare data with third-party vendors.

### What is FHIR?

Health Level Seven International (HL7) is a not-for-profit, ANSI-accredited standards developing organization dedicated to providing a comprehensive framework and related standards for the exchange, integration, sharing, and retrieval of electronic health information that supports clinical practice and the management, delivery and evaluation of health services.

### Fast Healthcare Interoperability Resources

- A set of standardized data models for healthcare
- Human readable resources
- Formats include XML, JSON & RDF/Turtle
- Discrete medical data templates: Patient,
   Practitioner, Procedures, Claims, et cetera

### FHIR Resource Data Model

### narrative

body

extensions

metadata

```
"resourceType": "Claim",
"id": "485f8afd-1ff4-450f-b1a0-2e154ace36ba",
"text": {
  "status": "active",
  "div": "<div xmlns=\"http://www.w3.org/1999/xhtr
"identifier": [
    "system": "http://example.com/claim-number",
    "value": "116396128"
"extension": [
    "url": "http://example.com/claim-line-number"
    "valueInteger": "112228901"
"meta": {
  "versionId": "1",
  "lastUpdated": "Tue-Oct-31-11:51:52-2023"
```

- FHIR resources have required data elements
- Extensions follow the 80% / 20% rule for use cases
- Grouped resources create a bundle. (Patient, encounter, procedure, practioner)

### A RESTful Data Exchange

By using the REST architectural style, FHIR takes the best of existing health information technology and common internet standards to create a modern method of interoperability. This allows health care systems to implement FHIR without steep learning curves and leading to faster application design.

### **FHIR RESTful API**

- Third-party applications using the FHIR API can be integrated into an EHR and feed information directly into the provider's workflow
- Utilizes the Open Authorization protocol for access
- API inputs include: EHR, IoT, Biomedical, CRM, Imaging, Billing, et cetera

### Better Data, Better Care

### **Consumer Empowerment**

21st Century Cures Act for interoperability and prohibition against data blocking

- Pricing transparency creates competition in the healthcare market
- Consumers empowered to switch providers and healthcare companies based on cost
- Health systems compelled to create a better experience for the consumer

### **Data Quality Outcomes**

Accruate patient data

- Avoid disconnected patient experiences
- Better diagnosis data
- On-demand history for immediate treatment (Medication allergies, etc.)

### Realtime data fidelity

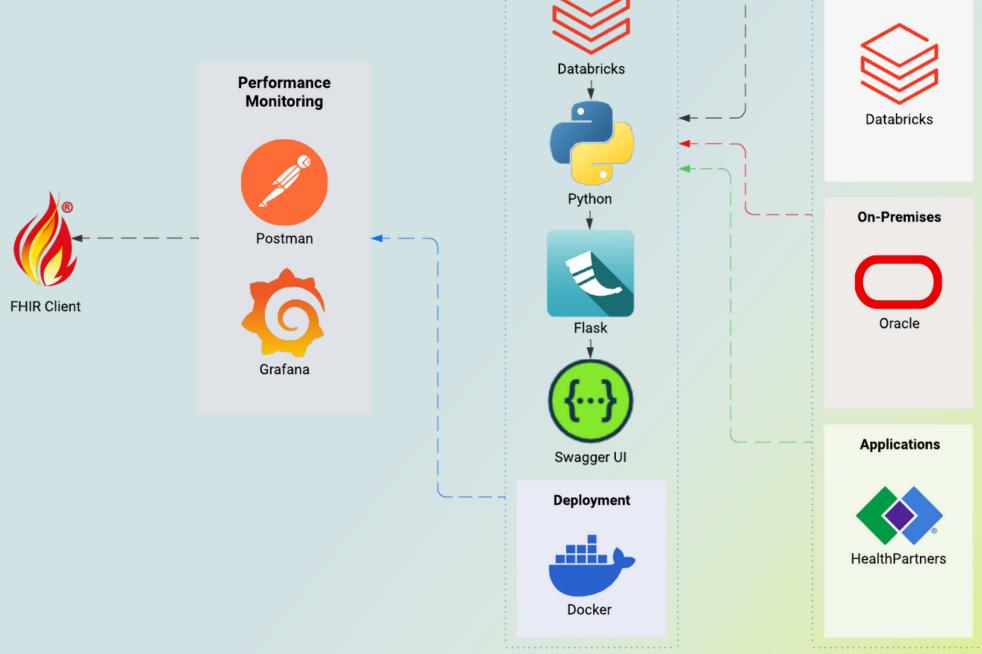
- Capture record changes from source at time of encounter
- Realtime feedback for data quality: reduce duplication, etc.
- Patients are billed correctly

### **Centralizing Data**

Systems integration

- Legacy and new data in one place
- Opportunities to perform artificial intelligence, machine learning and big data analytics
- VA data sharing pledge: lower out-ofpocket expenses and patient experience

### FHIR Facade API Architecture



**FHIR Facade API** 

**Legacy Data** 

Cloud

### DEMO

## FHIR API: Value Proposition

### **Operational**

Translating legacy systems data and applications to the FHIR standard

Stateless transactions for reduced memory usage & support for horizontal scalability Integration with thirdparty applications & FHIR servers

### API

### **Functional**

Standardized FHIR resources
with multitudinal purposes:
Clinical Research, IoT/Medical
Devices, Medical Administration

Fast shipment of API to accomplish business initiatives

### **Business**

Cures Act compliable processes to support the evolution of medical data