PUBLISHED IN 2022

SETTING THE WORLD ON FHIR®

Published by HL7® International, a not-for-profit organization, Fast Healthcare Interoperability Resources (FHIR®) is a standard for exchanging healthcare information electronically

A series of case studies illuminating how HIT professionals are using HL7®FHIR® to improve and advance modern healthcare

CASE STUDY

HL7 FHIR

How Humana Took HL7® FHIR® to the Cloud and Drove Better Patient Experiences

FHIR implementation brings new opportunity for legacy modernization and technology-enriched healthcare services

For healthcare providers, data interoperability is vital to provide the human-first, value-based patient experience consumers now expect. With interoperability comes the promise of personalized patient experiences and better patient outcomes, driven by the seamless and secure exchange of healthcare data.

But large enterprise organizations, particularly those with decades' worth of legacy systems, or multiple acquisitions, have a steep hill to climb. How can healthcare IT organizations effectively modernize data interoperability to enhance patient experience without compromising data integrity and security?

Leveraging the cloud-first approach to FHIR implementation, leading health insurance provider Humana avoided a rip-and-replace approach for modernizing legacy systems.

The problem: achieving FHIR compliance while maintaining decades' worth of data integrity

Humana's core platform came together over decades. Like any large enterprise, Humana has previous acquisitions and legacy technologies responsible for core data entry and gathering — systems that are business-critical and hold the private healthcare data of millions of people.

"When we attack this problem, we recognize the fact that to modernize our entire platform in a very short amount of time, to something that would be a centralized platform that could handle interoperability, was not possible to do at the core platform level or within core systems," said Levi Bailey, Humana's AVP of Cloud Architecture Healthcare Interoperability Services, in a recent podcast with HIMSS and MongoDB.

The approach: liberating and democratizing data to facilitate interoperability

Using a cloud-first approach, Humana tackled this problem by building a core data fabric that had the ability to both provide data from their systems of record and make them available to support additional requirements.

HL7 International

One of the design principles behind the core data fabric is that it's cloud native. With this principle in mind, Bailey's team looked at what delivery mechanisms would be used to consume healthcare data for interoperability. This led the team to an API-first methodology for integration. The APIs within the FHIR standard are based on RESTful protocols, which fit perfectly into a NoSQL document model.

"It had to be something that could serve data very fast," Bailey said in the podcast. "That's where we leverage technologies like MongoDB or NoSQL data stores to model out the data we're pulling from those core platforms, with this ODL layer, to store a more standardized format that is ready for consumption for interoperable APIs."

The approach is two-tiered: first Humana optimized data by bringing it in via the core data fabric in multiple data pipelines. Then, those pipelines come together to deliver claims data or clinical data from multiple disparate sources and stage the data into a single source, like MongoDB, so that Humana's data velocity needs are met.

From there, Humana partners with Microsoft Azure's FHIR-focused cloud storage solution to meet its interoperability standards.

FHIR implementation as an accelerator to refactoring legacy systems

The FHIR mandate, which started taking effect in 2020, will move companies like Humana from just an insurer with elements of health to a healthcare company with elements of insurance. In turn, Humana can modernize customer interactions.

"We live in a social media world where everything is a personalized experience and everything is driven to you," Bailey said. "Within the healthcare industry now, we would expect the same out of healthcare. Why shouldn't we?"

As one of the first healthcare insurers to fully implement FHIR, Humana was able to start improving patient experiences right away by introducing real-time data integration that allows for accurate, bidirectional data communications. The case studies for improving patient experiences and delivering value-based healthcare have given Humana the opportunity to differentiate based on services and outcomes, not just premium prices.

"They're building this digital and data backbone. And it's one that separates data from the applications, and it's delivering services to patients and providers in the applications that need it," said Jeff Needham, Principle, Healthcare Solutions at MongoDB. "In my opinion, this is tremendously forward thinking, and I think it will return value for both Humana and its patient populations in dividends."