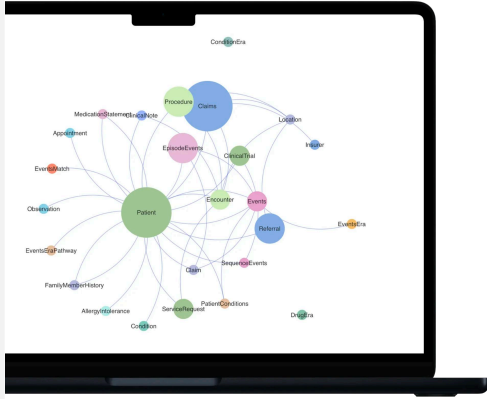


# Creating a FHIR-native analytics platform for a U.S.-based healthtech startup to transform specialty-practice EHR data into commercially valuable insights



zoadigm

## Outcomes for end clients

**9x** higher match rate

in patient selection for clinical trials compared with standard screening

**\$750K+**

in added value for a single clinical trial through improved patient identification

## Project summary:

Zoadigm, a U.S.-based healthtech startup focused on **transforming fragmented specialty practice EHR** data into actionable intelligence, engaged Edenlab to design and deliver its flagship product.

We built an end-to-end **FHIR semantic-layer analytics platform** that consolidates disparate healthcare data and equips providers with intuitive no-code analytics and real-time dashboards, enabling data-driven clinical and financial decision-making.

Location:

**U.S.**

Partnership period:

**2019 – Ongoing**

Industry:

**Healthcare**

Client type:

**IT Vendor | Analytics Startup**



Edenlab consistently displays traits that are exceptionally valuable and rare in the software development industry — commitment, competence, creativity, and integrity. Their dedication to projects is commendable, and their technical expertise is evident in the results. With a creative approach to challenges and a strong sense of integrity in all dealings, they've proven to be a reliable and innovative partner.



James Maldonado  
Zoadigm,  
Chief Platform Officer

## Associated services:

Analytics product development

HL7 FHIR solution development services

Data & Analytics

Data platform development

Product development

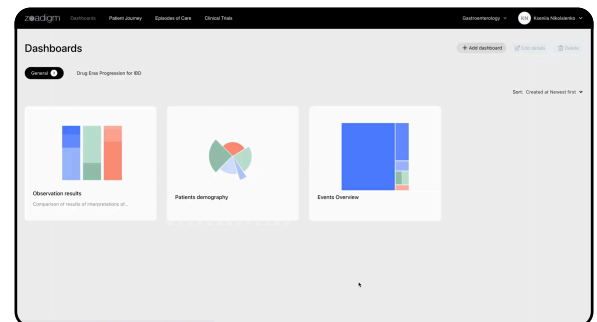
## Business goal and challenge

Zoadigm envisioned a new generation of healthcare analytics, where specialty practices could unlock commercially valuable insights from clinical, financial, and life sciences data and share those insights across a broader professional community.

Their initial attempt with another vendor fell short, as the chosen architecture couldn't support the envisioned functionality. To realize this innovation, Zoadigm needed a scalable, FHIR-native solution that could unify diverse data sources and deliver advanced analytics through an accessible, clinician-friendly platform.

## The solution

The platform enables clinicians to build reproducible cohorts and explore care pathways without technical expertise, while gaining access to interactive dashboards that highlight both clinical patterns and financial performance. Zoadigm's platform lowers the barrier to advanced healthcare analytics and helps practices unlock insights that were previously out of reach.



## Key features of the platform include:

- Cohort & Pathway Builder**  
 A no-code tool for creating reproducible, computable cohorts from EHR, claims, and life sciences data with scheduled updates.
- Cohort & Pathway Explorer**  
 Interactive dashboards and tables to analyze cohorts, compare pathways, and identify treatment patterns.
- FHIR Semantic Analytics Engine**  
 The core of the platform that consolidates diverse healthcare data from multiple sources, harmonizes it into a single consistent model, and makes it accessible through clear business concepts that clinicians and administrators can easily use for analysis and decision-making.
- ELT Module**  
 Custom integration engine with connectors for various EHRs.

## Use cases for end clients (specialty practices):

- Accelerated identification of clinical trial candidates**  
 Reducing reliance on clinicians to manually identify candidates, enabling faster screening and a larger pool of eligible patients.
- Care pathway optimization**  
 Analyzing treatment journeys across specialties, comparing pathways, and discovering variations that impact outcomes or costs.
- Population health insights**  
 Building reproducible cohorts (chronic conditions, high-risk patients) to support preventive care strategies and value-based care initiatives.
- Financial and operational analytics**  
 Linking clinical and claims data to track reimbursement models, evaluate service utilization, and improve practice revenue management.

# Edenlab's innovation

Edenlab devised a unique architecture that allows Zoadigm's platform to turn complex, nested FHIR clinical, financial, and life sciences data into a unified, intelligible model, making advanced analytics possible without requiring users to know SQL.

## Challenges

### Making sense of complex FHIR data

The FHIR standard was chosen for interoperability, but its highly nested structure made meaningful analytics difficult to run at scale.

### Data quality gaps and inconsistencies

Source systems often lacked complete timestamps, discharge data, or used inconsistent coding. Without addressing these gaps, any cohort or pathway analysis would be unreliable.

### Making analytics accessible for non-technical users

Clinicians and administrators needed to be able to explore pathways and build cohorts without SQL knowledge or technical training. A purely developer-driven interface would have limited adoption.

### Enabling real-time interactivity at scale

The platform needed to provide instant insights when running across millions of records from multiple practices. Queries on large FHIR datasets were too slow for interactive analytics.

### HIPAA compliance

Handling sensitive patient information meant the platform had to comply fully with HIPAA and safeguard Protected Health Information (PHI). Any gaps in privacy or security would undermine trust and adoption.

## Solutions

### Data materialization for analytics

Edenlab engineered a physical data layer based on FHIR, with a semantic layer on top to make the data consistent, usable, and ready for analysis.

### Data validation and enrichment rules

Implemented validation and enrichment rules to standardize fields and derive missing values where appropriate, improving the reliability of analytics.

### Semantic layer with no-code tools

Introduced a semantic layer with no-code tools for cohort building, filtering, and care pathway exploration, reducing dependency on technical teams and enabling clinicians to generate self-service insights.

### Pre-aggregation, indexing, and caching strategies

Optimized query execution by introducing pre-aggregation, indexing and caching strategies. This ensured sub-second responses on complex multidimensional queries and enabled interactive dashboards.

### Data access controls, de-identification

Applied access controls, de-identification, logging, and audit trails to ensure HIPAA compliance.



**Kodjin FHIR Server** for data validation, consolidation, and high-performance processing



**ClickHouse** as the columnar analytics engine to flatten and materialize nested FHIR data.



**Kubernetes** for scalability and modular deployment



**Prometheus, Grafana** for monitoring and observability



**React** for interactive dashboards (liveboards)

## Value delivered

Edenlab delivered end-to-end product development for Zoadigm, covering business analysis, software architecture, development, and implementation. Through a structured delivery approach, responsiveness, and technical expertise, Edenlab brought Zoadigm's vision to market and remains a trusted partner in scaling the platform and expanding its capabilities.

### 01

#### Efficient discovery and fast delivery

Through a structured discovery process, we quickly aligned with Zoadigm's product vision and translated it into a clear technical roadmap. Within the first three months, our team delivered a validated architecture and working prototypes, reducing the initial time-to-market by 40% compared to the client's previous vendor.

### 02

#### Innovative technology fit

Edenlab identified the right technical approach to realize Zoadigm's vision: a FHIR-native analytics engine that harmonizes EHR, financial, and life sciences data into a unified semantic model. This enabled self-service access to insights, high query performance, and support for millions of patient records, making the platform future-proof and easy to extend.

### 03

#### Long-term business impact

For Zoadigm's clients, the platform streamlines the identification of eligible study participants, enabling **significantly higher match volumes and faster identification**. Each additional enrolled patient generates **~\$35K in annual sponsor-funded revenue**, while quicker pathway analysis helps clinicians spot treatment variations and improve outcomes.

## Future plans

Zoadigm's next growth stage is focused on enabling value-based and episodic care models, helping providers move from volume-driven services to outcome-driven healthcare. The platform will empower practices to manage episodic care contracts, coordinate treatment across teams, and improve patient experiences while reducing inefficiencies.

By expanding data connectivity through the FHIR Patient API, Zoadigm will integrate insights from external clinics, providing a 360-degree view of patient journeys and enabling providers to make more informed, data-driven decisions.

Transform your EHR  
into an analytics-driven platform  
with a trusted IT partner

[Talk to Edenlab](#)