



KODJIN
by Edenlab

Kodjin Healthcare Data Platform Solution Brief

FHIR®-Compliant Solutions for Scalable Healthcare
Interoperability, Data Management, and Analytics



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Edenlab's Expertise and Our FHIR-Centric Data Platform

For healthcare organizations, interoperability is no longer just about connecting systems. It is about building a reliable data foundation that can support compliance, analytics, digital services, and long-term scalability.

At Edenlab, we develop interoperability platforms based on the FHIR® standard, high-load architecture, and real-world implementation experience. Kodjin Data Platform reflects that expertise, bringing together Kodjin FHIR® Server, data transformation, terminology, validation, access, and analytics-ready capabilities in one modular platform.

Our work is shaped by the realities of large-scale health data environments: fragmented legacy systems, strict regulatory requirements, high transaction volumes, complex terminology, and the need to make information usable across care delivery, operations, compliance, analytics, and AI.

Core Expertise Areas



Deep Healthcare Knowledge

We combine technical engineering with a practical understanding of healthcare workflows, payer-provider interactions, regulations, terminology, and data exchange challenges. This helps clients design solutions that fit real healthcare operations — not just technical specifications.



High-Load System Design

We design distributed platforms for national and enterprise environments where performance, reliability, security, and scalability are critical. This helps organizations avoid architectures that work in pilots but fail under production workloads.



FHIR® Platform Engineering

We build production-grade platforms around FHIR, not one-off integration layers. Kodjin FHIR Server supports large-scale workloads, real-time and batch exchange, advanced validation, and complex implementation scenarios — giving organizations a stronger foundation for long-term interoperability.



Data Transformation and Standardization

We help organizations turn inconsistent source information from HL7 v2, C-CDA, and custom formats into validated, standardized, and reusable structures. This reduces integration complexity and makes data easier to exchange, govern, report on, and use across downstream systems.



Regulatory and Standards Alignment

We support organizations and product teams working with interoperability requirements, including HL7 FHIR ecosystems, ISiK, ONC, EHDS-related initiatives, and certification-driven implementation processes. This reduces uncertainty when building for regulated healthcare markets.



Analytics and AI

We help organizations turn healthcare data into intelligent products, workflows, and decisions. From analytics ecosystems and predictive models to clinical copilots, smart automation, and AI-enabled applications, we bring the data foundation and implementation expertise needed to make AI work in real healthcare environments.

What Makes Edenlab Different

- 🔥 Deep healthcare and FHIR architecture expertise
- 🔥 Proven experience building high-load healthcare platforms
- 🔥 Product-level engineering expertise, not only integration delivery
- 🔥 Focus on practical data usage, not just exchange

Trusted by Industry Leaders



Kodjin Data Platform Executive Summary

Kodjin Data Platform is a modular, high-performance FHIR-based platform designed to help healthcare organizations **ingest, standardize, store, exchange, and use healthcare data at scale.**

It solves a core industry challenge:

moving from fragmented, hard-to-use data → **operational, analytics-ready, and interoperable data environments**

The platform combines:

- 🔥 A high-load FHIR Server
- 🔥 Terminology management
- 🔥 Data transformation pipelines (mapping + ELT)
- 🔥 Analytics-ready data layer

The Real-World Problem We Solve

Healthcare organizations face three systemic data challenges that make interoperability, analytics, and scalable digital health initiatives difficult to achieve.



Healthcare Data Fragmentation

Data is distributed across:

- 🔥 EHRs/EMRs/HISs
- 🔥 Labs
- 🔥 Claims systems
- 🔥 Medical devices and wearables
- 🔥 Legacy databases



Data Processing Complexity

Healthcare data:

- 🔥 Uses multiple formats (HL7v2, C-CDA, FHIR, custom)
- 🔥 Relies on inconsistent terminologies
- 🔥 Requires mapping, normalization, and validation before use



Limited Usability

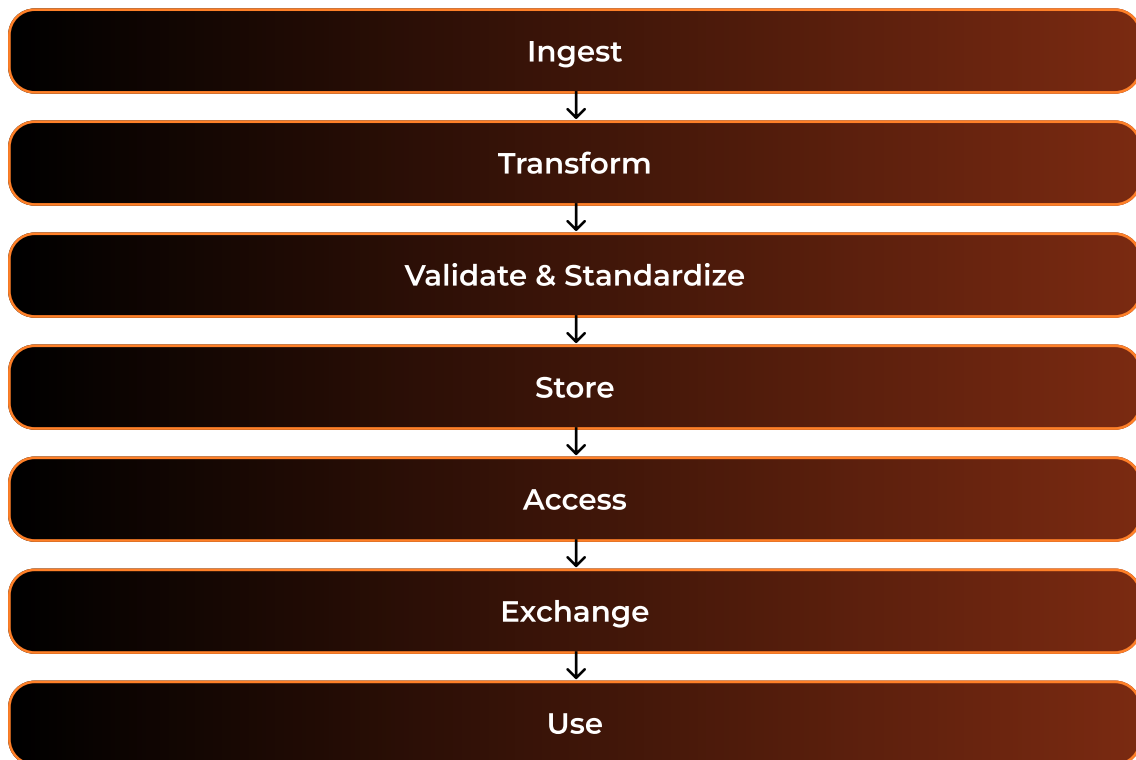
Even after integration, data is often:

- 🔥 Hard to query
- 🔥 Not ready for analytics, reporting, or AI
- 🔥 Requires heavy engineering effort

Kodjin Data Platform Approach

Kodjin is not just a FHIR server.

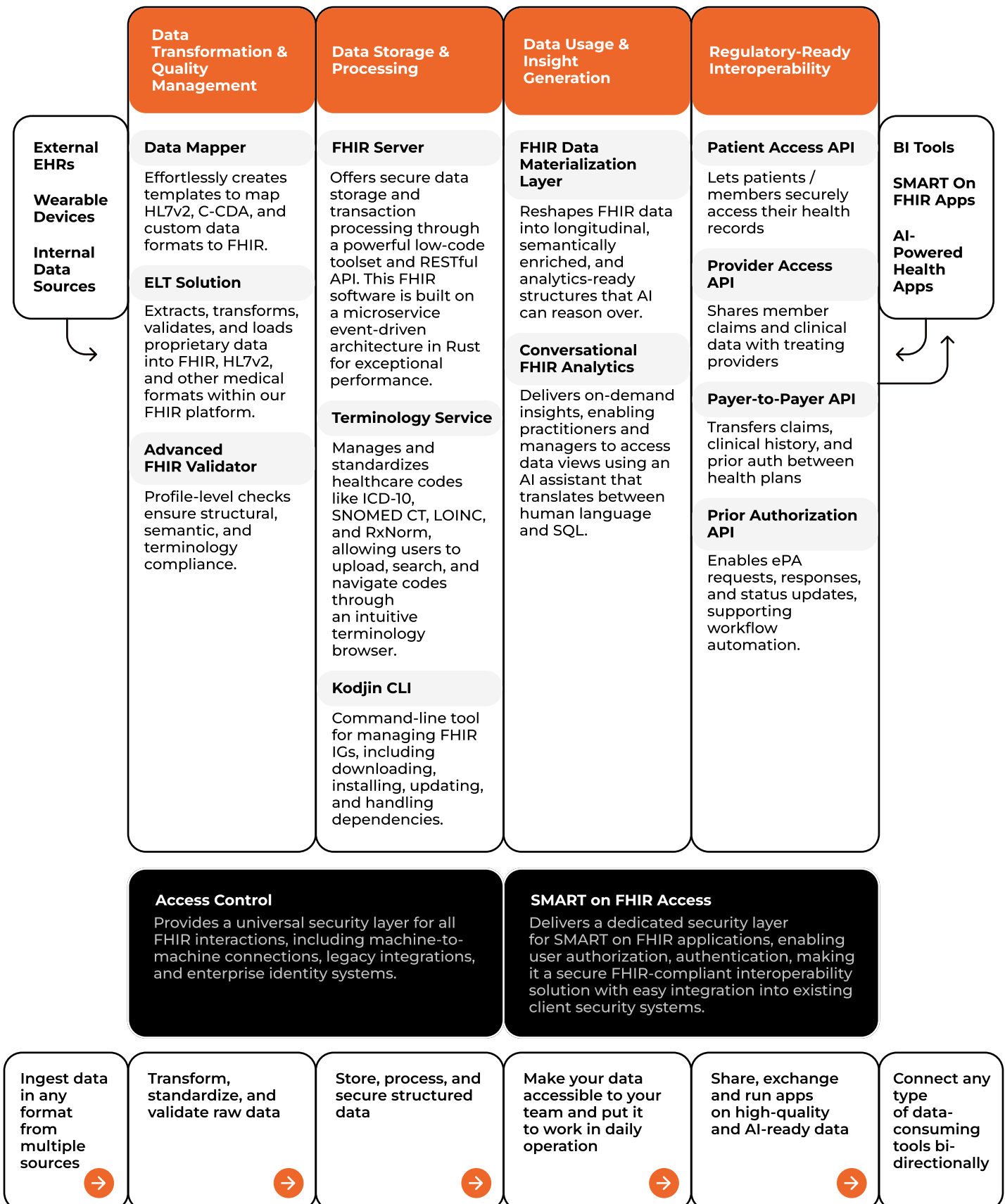
It is a data platform that covers the full data lifecycle:



This is achieved through a unified architecture of interoperable modules.

Kodjin Data Platform Architecture

Kodjin Data Platform brings together the core capabilities needed to turn fragmented healthcare data into secure, standardized, and usable infrastructure. Its modular architecture connects source systems, prepares data for trusted use, and makes it available for exchange, analytics, applications, and regulatory workflows.



This Architecture Enables:



Real-Time + Batch

For both event-driven workflows and large-scale data pipelines



Horizontal Scalability

Built to grow with data volume, users, and connected systems



Modular Deployment

Use the full suite or selected components as needed






Regulatory-Ready Exchange





Supports secure, standards-based exchange requirements

Kodjin Deployment & Integration

The platform supports flexible deployment across:

-  **Cloud infrastructure** — AWS, Google Cloud, Microsoft Azure
-  **On-premises environments** — for organizations with strict data residency, security, or infrastructure requirements
-  **Hybrid architectures** — for phased modernization, distributed systems, and mixed infrastructure landscapes

Kodjin is built for production-grade implementation with:

-  **Kubernetes-native deployment** for scalability and operational control
-  **Infrastructure-as-Code support** for repeatable, manageable deployments
-  **IAM integration** with OAuth 2.0, OpenID Connect, and Keycloak
-  **SMART on FHIR support** for secure application access and user authorization

Unlock the Value of Your Healthcare Data

Discover How to Turn Complex Data Into Actionable Insights

[Request a Demo](#)

Core Components of Kodjin Data Platform

Kodjin FHIR® Server — Core Platform for Scalable Healthcare Data Exchange

A high-performance, event-driven server built on FHIR and designed to scale with healthcare organizations — from focused implementations to production-grade interoperability platforms.

Key capabilities:

- 🔥 FHIR® RESTful API support
- 🔥 Transaction & batch processing
- 🔥 Bulk import and export
- 🔥 Advanced search & custom search parameters
- 🔥 Event-driven workflows through subscriptions

Key differentiators:

- 🔥 Microservices architecture (Kubernetes-native)
- 🔥 Built in Rust for performance and reliability
- 🔥 Async event-driven processing (Kafka)
- 🔥 Polyglot persistence (MongoDB & ClickHouse)

What it enables:

- 🔥 Clinical Data Repository (CDR)
- 🔥 Interoperability backbone
- 🔥 High-load transactional systems

Terminology Service — Consistent Clinical Codes and Vocabularies Across Systems

A dedicated service for managing, validating, and standardizing healthcare terminologies across datasets, applications, and exchange workflows.

Key capabilities:

- 🔥 Support for ICD-10, SNOMED CT, LOINC, RxNorm, and custom terminologies
- 🔥 *\$validate-code*, *\$expand*, *\$translate*, and *\$lookup* operations
- 🔥 Terminology search and browsing
- 🔥 Profile-specific terminology binding
- 🔥 Real-time terminology updates

Key differentiators:

- 🔥 Supports both standard and custom code systems
- 🔥 Helps maintain semantic consistency across multiple data sources
- 🔥 Allows teams to manage terminologies through an intuitive UI or standard FHIR API
- 🔥 Works together with validation and profiling logic to support more reliable data exchange

What it enables:

- 🔥 Cleaner data exchange
- 🔥 More reliable reporting and analytics
- 🔥 Reduced terminology inconsistencies
- 🔥 Stronger semantic interoperability

Core Components of Kodjin Data Platform

Kodjin Data Mapper — Faster Transformation from External Formats to FHIR

A template-based mapping engine for transforming external healthcare data into FHIR resources and structures.

Key capabilities:

- 🔥 Mapping from HL7 v2, C-CDA, legacy, and custom formats
- 🔥 Support for different FHIR versions
- 🔥 Reusable mapping templates
- 🔥 Configurable transformation rules
- 🔥 Transformation into standardized FHIR resources and structures

Key differentiators:

- 🔥 Reduces custom development effort
- 🔥 Supports repeatable mapping logic
- 🔥 Helps accelerate integration and migration projects

What it enables:

- 🔥 Faster onboarding of new data sources
- 🔥 Standardized FHIR output
- 🔥 Lower integration complexity
- 🔥 More scalable data transformation workflows

ELT / Data Pipelines Layer — Scalable Data Movement, Transformation, and Loading

A pipeline layer for complex healthcare data ingestion, transformation, enrichment, validation, and loading scenarios.

Key capabilities:

- 🔥 Multi-source ingestion
- 🔥 Batch processing for large-scale data loads
- 🔥 Data enrichment and quality checks
- 🔥 Monitoring and observability
- 🔥 Built on the DAD stack: Dagster, Airbyte, and dbt

Key differentiators:

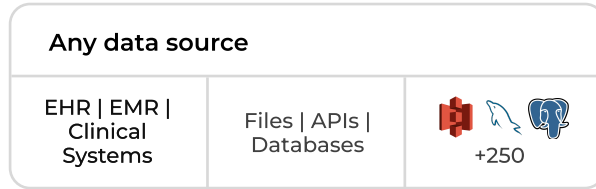
- 🔥 Purpose-built for large-scale batch data transformation and loading
- 🔥 Designed for repeatable, observable data operations
- 🔥 Works across complex enterprise and healthcare data landscapes

What it enables:

- 🔥 Scalable data pipelines
- 🔥 More maintainable data operations
- 🔥 Faster integration of new sources
- 🔥 Stronger foundation for analytics and AI use cases

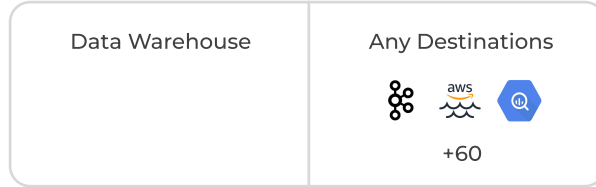
Extract

Medical data extraction from any external systems, including custom sources.



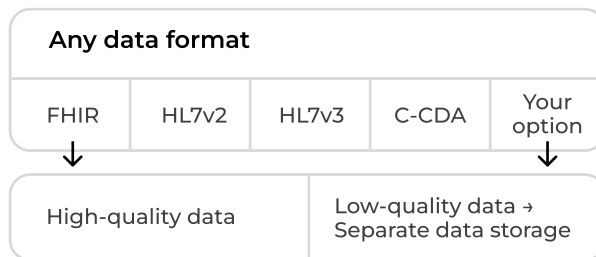
Load

Loading data into a warehouse and structuring it.



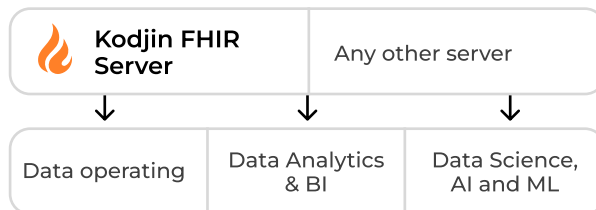
Transform

Transforming data into required formats using SQL scripts. Segregating high-quality and low-quality data.



Publish to Target Systems

Sending data to the server using custom Python scripts.



Modern Data Stack

- ELT/ETL orchestration
- Connector building
- Data transformation

Core Components of Kodjin Data Platform

Kodjin Analytics — AI-Powered Data Platform for Healthcare Providers, Health IT Vendors, and Payers

Kodjin Analytics helps organizations turn standardized, semantically enriched healthcare data into accessible insights for clinical, financial, operational, and research use cases.

95%

Reduction in time-to-insight

Weeks → Seconds

90%

Reduction in IT analytics backlog

Users self-serve

Zero

Technical skills required

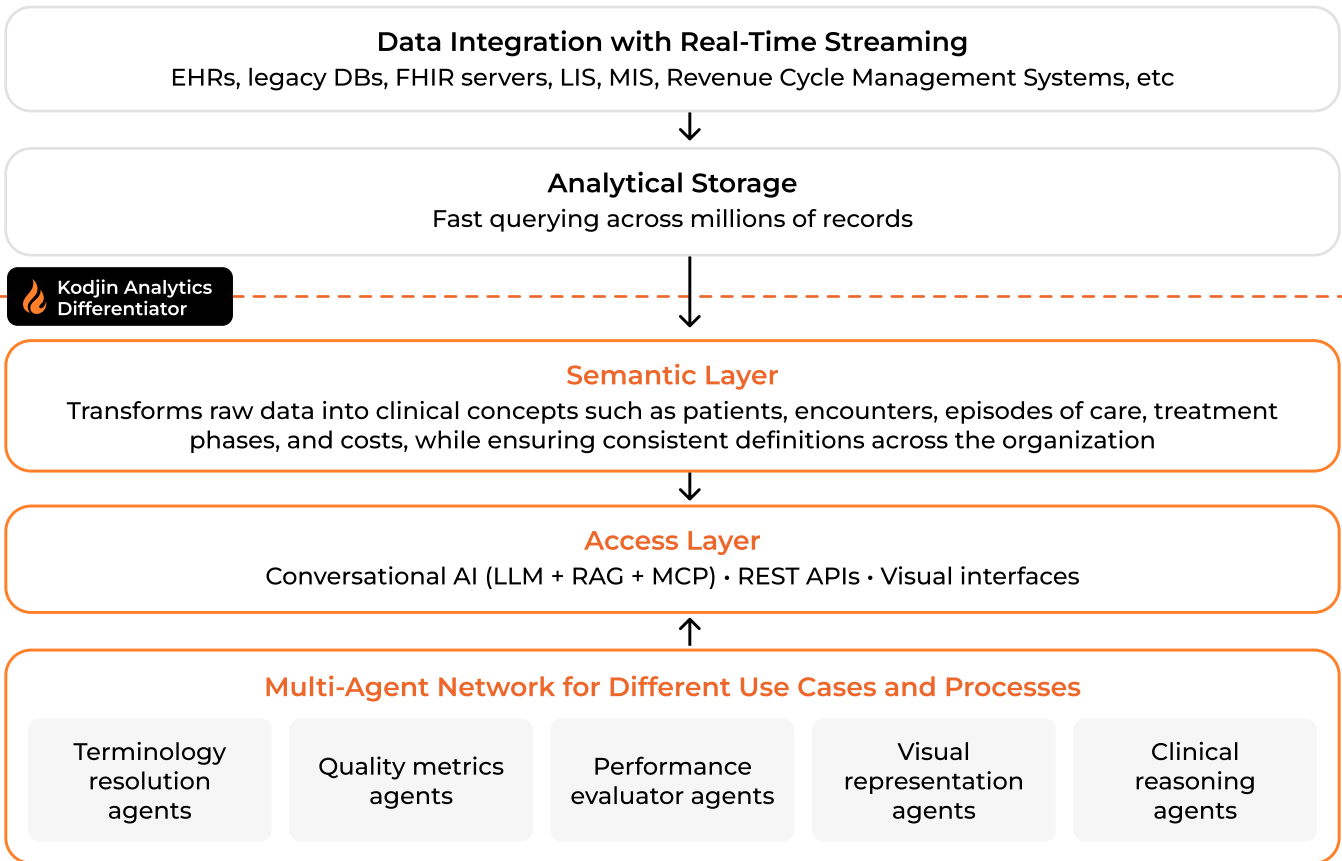
For end users

<1s

Query response across millions

Of records

How Kodjin Analytics Works



Key capabilities:

- 🔥 Conversational analytics for asking questions in natural language
- 🔥 Clinical concept understanding across events, conditions, procedures, medications, and outcomes
- 🔥 Cohort and longitudinal analytics without rebuilding data logic
- 🔥 Shared semantic foundation for clinical, financial, and operational teams
- 🔥 Security and compliance readiness for sensitive healthcare data
- 🔥 Healthcare-specific analytics model designed around real use cases
- 🔥 Ready out of the box for healthcare data workflows without extensive data model re-engineering

Key differentiators:

- 🔥 Designed specifically for healthcare analytics workflows
- 🔥 Makes data accessible beyond technical teams
- 🔥 Reduces dependency on SQL, manual reports, and repeated dashboard requests
- 🔥 Lets more teams work directly with data, not just analysts and technical users

Kodjin Analytics value:

- 🔥 Faster answers to clinical, operational, financial, and research questions
- 🔥 Easier cohort discovery and patient journey analysis
- 🔥 Better alignment across teams through shared definitions and consistent logic
- 🔥 More value from existing healthcare data without extensive data model re-engineering

Key Kodjin Data Platform Advantages



Built for Healthcare Scale

Designed for high data volumes, complex workflows, and demanding production environments.



Full Lifecycle Coverage

From ingestion and transformation to validation, exchange, analytics, and use.



Modular by Design

Use the full suite or selected components — and expand as your needs grow.



Real-Time + Batch Ready

Support event-driven workflows, large-scale migrations, and high-volume data pipelines.



FHIR at the Core

Standardized exchange, validation, profiling, terminology, and API access built around FHIR.



Production-Ready Platform

Built from real healthcare implementation experience — not proof-of-concept thinking.

Key Use Cases

Clinical Data Repository (CDR)

- Unified patient data
- Longitudinal records
- Cross-system access

Payer Interoperability

- Prior authorization
- Payer-to-payer exchange
- Claims data integration

Digital Health Product Development

Backend for:

- EHRs/EMRs/HISs
- Telehealth platforms
- AI-powered solutions

Interoperability Layer for EHR / EMR / HIS

- Replace point-to-point integrations
- Standardize APIs

Healthcare Data Platform for Analytics

- Structured, normalized datasets
- Foundation for BI and AI

Health Information Exchanges (HIE / HIN)

- Multi-party data exchange
- National/regional infrastructure

Who Can Benefit from Kodjin Data Platform



Healthcare Providers & Networks

Hospitals, clinics, and care networks that need to unify fragmented data, connect systems more efficiently, and build a reliable foundation for clinical workflows, analytics, and patient-centric care.



Payers

Health plans and insurance organizations looking to streamline data exchange, support regulatory requirements such as prior authorization and payer-to-payer exchange, and improve operational efficiency through standardized, high-quality data.



Health IT Vendors & Startups

Product companies building EHR/EMR/HIS systems, digital health platforms, and AI-powered solutions that need a scalable, FHIR-native backend to accelerate development, streamline integration, and support interoperability from the start.



Research Organizations & Life Sciences

Organizations working with clinical, real-world, and population-level data that need standardized, high-quality datasets for research, analytics, and advanced use cases such as clinical trials and AI-driven insights.



Data Analytics Companies

Analytics teams and vendors that need structured data to build scalable BI, AI, and advanced analytics solutions without complex data preparation overhead.



Local and National Healthcare Entities

Government bodies, HIEs, HINs, and public health organizations building regional or national data infrastructure that must securely connect multiple stakeholders, systems, and data sources at scale.

Why Kodjin Data Platform

Kodjin is not positioned as “just another FHIR server”. It is:



A production-ready interoperability backbone



A scalable data platform for healthcare systems



A foundation for analytics and AI on healthcare data

Proof & Experience

Kodjin is built on real-world implementations, including:

National-level healthcare systems

Large-scale interoperability projects

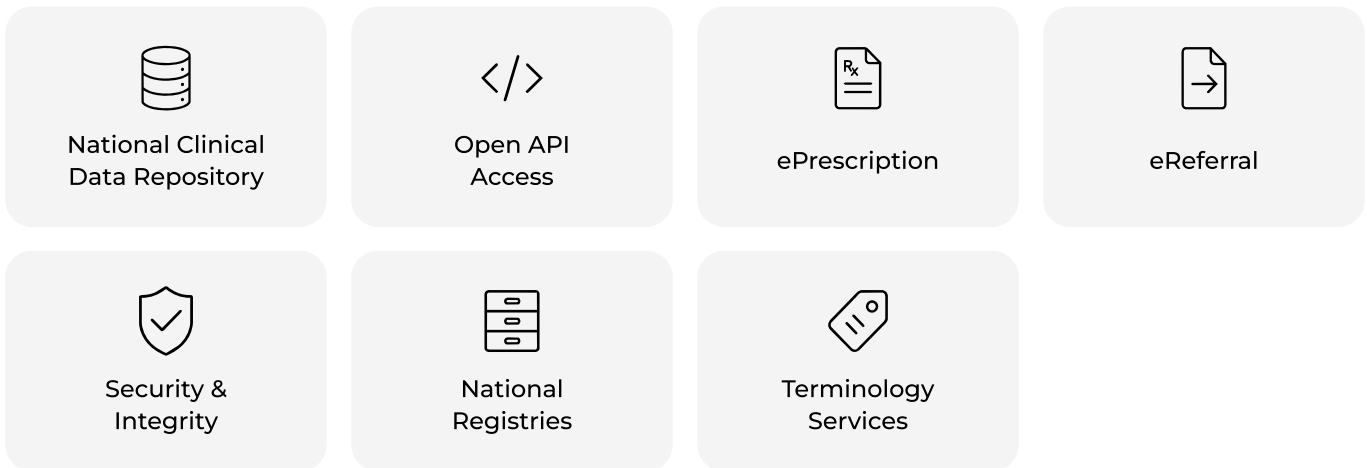
High-load data platforms

Nationwide EHR Platform Entirely Developed by Edenlab

Edenlab designed and developed the core architecture behind Ukraine's national eHealth system — a nationwide centralised clinical data repository created to support secure, real-time access to medical data across the country.

The system was built for one of the hardest healthcare infrastructure challenges: connecting a fragmented healthcare ecosystem, enabling data exchange between providers and systems, protecting sensitive patient information, and supporting national regulatory requirements at scale.

Today, Ukraine's national eHealth system operates as a high-load digital health infrastructure supporting core services across the healthcare sector, including:



It demonstrates what production-grade healthcare infrastructure must be able to do: scale nationally, keep sensitive data protected, support real-time exchange, and remain resilient under real-world pressure.

36,5M+	15K+	8,275+	33	1000	75M
patient records	pharmacies	facilities	regional EHRs integrated	TPS current system load	digital prescriptions issued

The same engineering mindset shapes Kodjin Data Platform: built for healthcare organizations of different sizes, it enables scalable infrastructure, protects sensitive data, supports real interoperability, and makes healthcare data usable where it matters.

Book a Call with Our Experts

Discuss Your Interoperability Goals
and Explore How Kodjin Can Support Your Use Case

[Book a Call](#)