



# **Accelerating Lab Test Ordering with Epic Integration: A Scalable Strategy for Healthcare Connectivity**

## About The Client

The client is a leading diagnostic company, renowned for its comprehensive lab services across pediatrics, oncology, neurology, and rare diseases. With a legacy rooted in academic excellence and clinical innovation, the client empowers providers and patients with accurate, actionable insights to support personalized care and advance precision medicine.

# Challenge

With increasing demand for transparency, accessibility, and seamless communication in healthcare, the client sought to introduce a secure, patient-facing portal that could deliver genetic test results, support bi-directional messaging, and integrate with core systems, including Epic and their internal Laboratory Information Management System (LIMS).

The client wanted to:

- Evaluate technology pathways for patient portal deployment
- Define Minimum Viable Product (MVP) functionality that aligns with the client's workflows and user needs
- Map technical requirements and integration strategy with Epic (FHIR/HL7) and internal LIMS
- Recommend infrastructure and DevSecOps practices for long-term scalability and HIPAA compliance

# Solution

BigRio was brought in to conduct a comprehensive discovery and feasibility assessment, guiding the strategic direction for portal implementation and technical design.

## 1. Evaluation of Portal Delivery Models

BigRio assessed four potential implementation approaches:

- Epic MyChart Extension
- Third-Party Platforms (Bridge, Caspio, Clinked)
- Custom Portal Development
- Provider-Facing EMR Portal Only (no patient access)

Each model was compared across critical dimensions such as:

- Patient experience & usability
- Branding control and flexibility
- HIPAA compliance & data security
- Technical complexity & integration feasibility
- Total cost of ownership

After evaluating test ordering, result delivery, and status update capabilities across these models, Epic Aura emerged as the most efficient and scalable solution.

Key reasons included:

- Native integration with Epic EMRs
- Compatibility with Care Everywhere, Beaker, and Bridges
- Streamlined maintenance through Epic-supported updates

BigRio recommended Epic Aura as the foundational architecture for long-term interoperability.

## 2. Build & Onboarding Strategy

To address the time and cost of onboarding new provider organizations, BigRio used the “Accelerate” Model—an Epic-standardized build that allows the client’s services to be rapidly activated across institutions with minimal customization.



BigRio's Accelerate Model:

- Reduces integration lead times
- Enables consistent onboarding experiences
- Supports scalability across diverse Epic clients

BigRio provided a tailored implementation playbook detailing steps for activation using Epic's existing frameworks.

### **3. Multi-EMR Interoperability Assessment**

Recognizing the diversity of its client base, the client also required a strategy for non-Epic EMR systems.

BigRio evaluated:

- FHIR endpoints for modern EMR platforms
- HL7 v2 interfaces for legacy systems
- SSO-enabled portals for secure, credentialed access

Each approach was assessed based on its ability to:

- Support real-time test ordering
- Enable transparent result tracking
- Ensure secure and compliant data exchange


A multi-pronged interoperability strategy was proposed, aligned with the client's scalability goals.

### **4. Ordering Workflow Analysis & Data Exchange Mapping**

To ensure seamless end-to-end integration, BigRio analyzed the client's internal lab workflows, mapping:

- Order intake points across provider channels
- Data touchpoints within the client's LIMS
- Result generation and reporting mechanisms

Based on this, BigRio designed bidirectional integration pathways to support:

- Real-time order placement
  - Status update feeds
  - Final result delivery directly into EMRs
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## 5. Infrastructure, Hosting & Compliance Recommendations

BigRio conducted a forward-looking assessment of infrastructure and compliance requirements:

- Compared cloud platforms (AWS, Azure) for HIPAA-compliant hosting
- Proposed encryption models and access control mechanisms
- Defined a DevSecOps approach for secure, vendor-neutral code delivery
- Proposed a set of infrastructure and DevOps best practices tailored to the client's compliance and scalability needs.

The proposed architecture ensures data fidelity while minimizing manual interventions.

## Outcomes

Deliverables included:

- Epic Integration Roadmap – Strategic guidance for phased Epic Aura implementation
- Comparative Analysis – Evaluation matrix for Epic Aura, HL7, FHIR, and Custom software development
- Technical Architecture Diagrams – Visual mappings for each integration method
- Integration Sequencing Plan – A phased approach to minimize disruption and ensure continuity

BigRio's discovery engagement enabled the client to:

- Define a clear path for scalable Epic integration
- Shorten the onboarding timeline for new clients
- Enhance transparency for referring providers
- Build a foundation for future multi-EMR interoperability

With a unified technical strategy in place, the client is well-positioned to deliver a modern, frictionless genetic testing experience for its providers and patients alike.

## LET'S CONNECT

For more information on how BigRio can help you, contact us at [info@bigr.io](mailto:info@bigr.io) or [click here](#).