

Solution Reference Architecture Healthcare Multi-Product Initiative

This Solution Reference Architecture (SRA) defines the standard, reusable blueprint for implementing individual healthcare solutions (product lines, programs, or initiatives) aligned with the Enterprise Reference Architecture. It ensures consistency, safety, interoperability, and delivery speed while supporting clinical, member, provider, and operational workflows.

Solution Architecture Scope

Applies to product lines such as Telehealth, Care Management, Digital Front Door, Pharmacy, Claims Modernization, Analytics Enablement, and Partner Integrations.

Standard Logical Layers

Experience Layer – Web, Mobile, Clinician, Partner channels
Solution Services Layer – Domain-aligned services for the solution
Platform Services Layer – Enterprise shared services (API, identity, events, audit)
Data Layer – Operational data, events, analytics pipelines
Integration Layer – EHR, legacy, vendor, and partner systems
Infrastructure Layer – Cloud, network, security, observability

Reference Integration Patterns

- API-first synchronous integration (REST/GraphQL)
- Event-driven integration for cross-product data sharing
- Façade + strangler for EHR and legacy systems
- Read/write separation for clinical systems
- Bulk/batch for claims and reporting workloads

Mandatory Platform Services Usage

Identity & Access Management, Consent Management, API Gateway, Event Bus, Audit Logging, Notification Service, Workflow Engine, Document Service, Configuration Management

Non-Functional Requirements (Baseline)

Availability $\geq 99.9\%$
RTO ≤ 30 min, RPO ≤ 15 min
Encryption in transit & at rest
Full auditability for PHI
Scalable for seasonal and event spikes

Security & Compliance Guardrails

Zero Trust access model
RBAC/ABAC enforcement
PHI data flow diagrams required
Threat modeling mandatory
Security scans integrated in CI/CD

Delivery & Governance Artifacts

Solution Architecture Diagram (C4 L2/L3)
ADRs for major decisions
API contracts and schema registry
Data flow diagrams
Deployment architecture & runbooks
Migration and cutover plan

Why This Solution Architecture Works

Accelerates delivery through reuse, enforces healthcare safety and compliance, reduces integration risk, and ensures every solution aligns with enterprise governance while preserving team autonomy.