

InXite Evidence Timed Outcome Journey Intelligence

Technical Brief on Governed Evidence Adaptive Journeys ClearPrice Transactions and Closed Loop Learning

Controlled Counsel and Technical Review Brief | 16 September 2026

Published by InXite.Health, a division of InXite Data Systems LLC.

Central thesis

Evidence-Timed Outcome Journey Intelligence determines what authorized evidence means, when it became knowable, which possible outcome journeys it changes, whether a useful decision window remains and which dependent forecasts, actions and financial objects must update when evidence, permissions or outcomes change.

Technical Summary

This brief defines the generalized InXite method and its healthcare implementation. Each observation becomes a versioned evidence object with subject, source, permission, evidentiary state and event-relative timing. The resulting graph supports current-state estimation, adaptive outcome journeys, action comparison, transaction fulfillment, financial reconciliation and selective learning. The Journey Cost Twin is one healthcare embodiment of this generalized architecture.

The graph supplies governed features to the Whole-Person Digital Twin, Adaptive Journey Graph, Action Impact Engine, Personal Utility Model and Financial Twin. Derivation lineage connects every output to its authorized evidence. New evidence, person corrections, revoked permissions and

measured outcomes update only the affected portions of the model. This supports explanation, selective retraction, divergence detection and calibration.

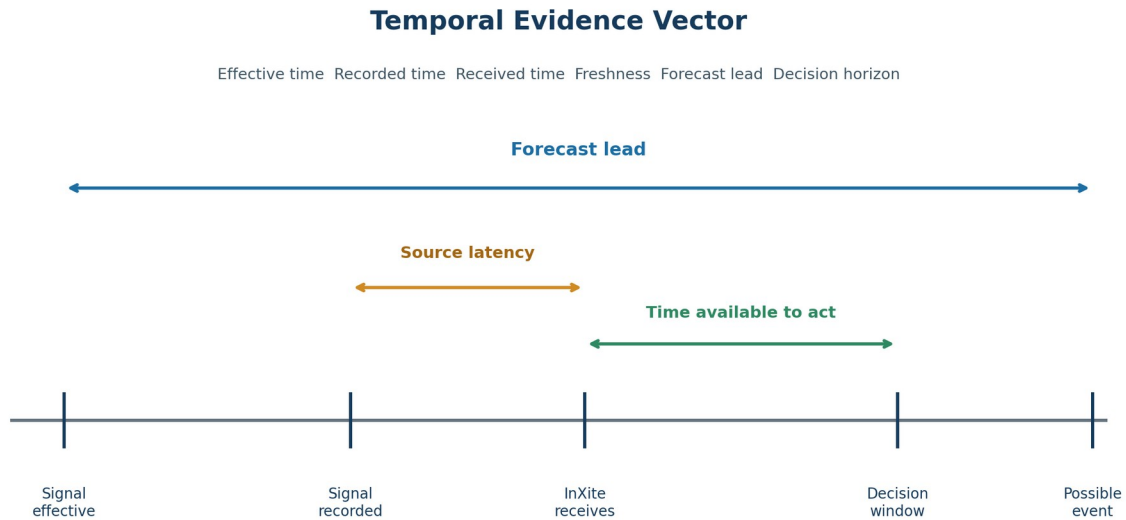


Figure 1 Temporal attributes determine forecast lead source latency and time available to act

1 System Boundary

The system separates current-state estimation, journey forecasting, action-impact modeling and personalized optimization. Large language models may extract candidate concepts, reconcile narrative context and generate grounded explanations. They are not the sole system of record or the sole predictor. Structured evidence, model services, policy checks and versioned outputs remain authoritative.

Function	Input	Output	Primary control
Current state estimation	Authorized reconciled evidence	Best supported current state	Identity time conflict freshness and missingness
Journey forecasting	Current state pathway knowledge and temporal features	Possible events horizons and likelihoods	Calibration cohort drift and intended use
Action impact modeling	Journey drivers interventions and evidence	Conditional pathway changes	Causal evidence and professional boundaries
Personalized optimization	Reasonable options personal priorities and constraints	Ranked choices with sensitivity	Safety constraints and explainable utility

Generalized Outcome Journey Model

The generalized system represents a subject, its current state, plausible future states, decision points, actions, expected outcomes and later observations as versioned linked objects. An outcome can represent health, financial, operational or enterprise value. Domain-specific policy and model services constrain which evidence and actions apply.

Selective Dependency Update

Every derived feature, forecast, ranking, explanation and action retains lineage to its supporting evidence and model version. New evidence, correction or permission change triggers dependency analysis. The system withdraws, reviews or recalculates affected outputs while leaving unrelated pathway regions unchanged.

2 Temporal Evidence Model

Each material observation is stored with source identity, subject, permission, evidentiary state and temporal attributes. The target event and forecast horizon are explicit parameters. This design allows one observation to play different roles in different forecasts and prevents stale or delayed data from acquiring authority merely because it came from a clinical system.

Field	Required behavior
Subject and attribution	Identify whom the observation concerns and whether attribution was confirmed
Effective recorded and received time	Preserve all three times and calculate documentation and ingestion latency
Freshness rule	Evaluate whether the observation remains applicable to the current decision
Forecast lead	Measure how long before the target event the signal became available
Decision horizon	Measure the remaining time before an option loses value or availability
Evidence state	Retain known person-reported device-observed inferred conflicting or unknown status
Corroboration state	Represent support conflict and source independence
Permission and purpose	Enforce allowed uses recipients duration and revocation
Derivation lineage	Identify features forecasts rankings and actions that depend on the observation

Dynamic Temporal Roles

Leading evidence becomes available before a modeled event. Coincident evidence improves the estimate of the current state. Lagging evidence confirms a prior event, utilization pattern, cost or outcome. The labels are computed relative to the target event. A laboratory result can be coincident with a present condition and leading for a later complication. A wearable record can be lagging when synchronization is delayed.

3 Person Directed Signal Processing

Person-directed capture allows a consumer to share a selected post, article, journal entry, voice statement or life update without passive account monitoring. The ingestion workflow records the item and asks the person to confirm whether it concerns them, another person or a general interest. Only an authorized self-relevant or relationship-relevant signal can influence the applicable model.

Processing stage	Required result
Capture	Visible record of the item source date note and requested purpose
Attribution	Confirmed subject and relationship to the account holder
Relevance	Bounded life-event or context category with low-relevance items set aside visibly
Evidence qualification	Person-reported or inferred status with explicit confidence
Corroboration	Supporting conflicting or absent evidence preserved
Authorization	Permitted outputs recipients duration and revocation state
Graph update	Only affected current-state journey and financial objects recomputed
Retraction	Dependent outputs reviewed or withdrawn when the signal is removed

Organizational Firewall

Person-directed signals and derived forecasts require a prohibited-use policy enforced in architecture. They may not be exposed for underwriting, adverse eligibility, individualized rate setting or risk selection. Authorized care coordination and aggregate analysis require separate purpose checks and minimum necessary views. Linked-household use requires independent permission from each affected person.

4 Graph and Model Services

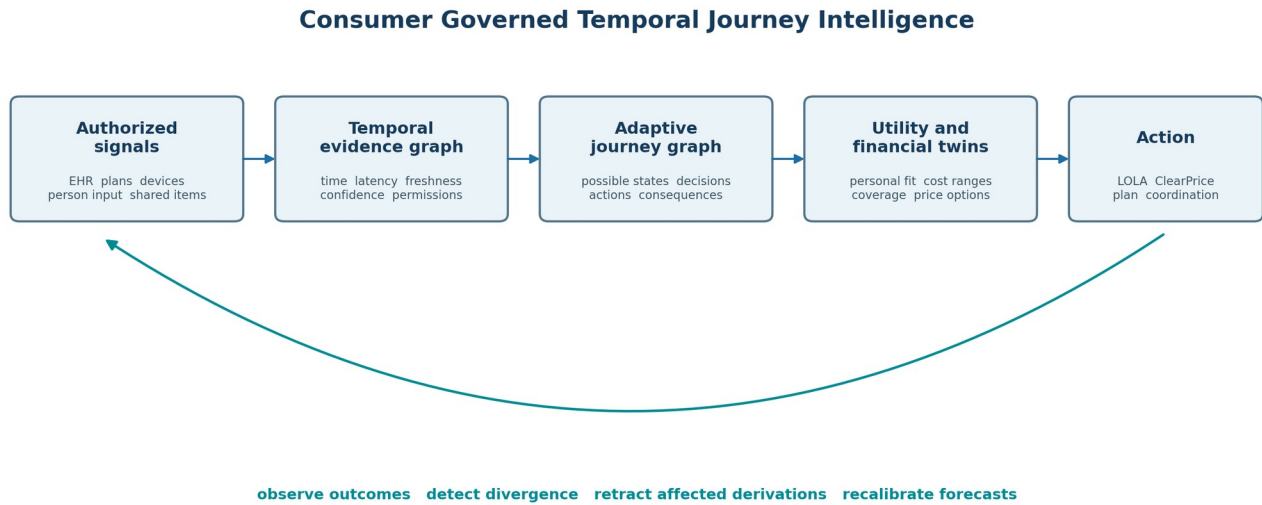


Figure 2 Model services operate on governed evidence and return versioned outputs

The Adaptive Journey Graph contains possible states and transitions. A temporal signal can change a node's likelihood, expose a new decision point, close an expired option, widen a cost range or alter the information needed next. Selective recomputation uses derivation lineage to avoid rebuilding unrelated portions of the journey.

Graph object	Minimum fields
State node	State type horizon evidence set permissions confidence and version
Possible event	Target definition likelihood distribution time distribution and dependencies
Decision point	Reasonable options opening and closing times missing information and professional boundary
Action edge	Targeted driver conditional effect evidence burden and monitoring plan
Financial edge	Consumer sponsor and total cost distribution payment route bundle and administrative conditions
Learning signal	Observed event final cost divergence affected objects and calibration disposition

Uncertainty Contract

The interface and API must keep five concepts separate: evidence status, signal quality, event probability, model uncertainty and cost variability. A source-confirmed observation can still support a poorly calibrated prediction. A low-probability event can have strong evidence for inclusion as a scenario. A precise quote can still exclude material services. Conflating these concepts creates false confidence.

ClearPrice Transaction and Fulfillment System

ClearPrice creates a versioned transaction record tied to the person, qualified service or product, locality, bundle definition, payment route, benchmark basis, option, quote, slot, prerequisites and final financial events. The record separates comparable option discovery from execution and preserves each material state transition.

State and Route Control

Illustrative states include searched, qualified, quoted, verified, secured, scheduled, prerequisite pending, ready, completed, submitted, adjudicated or paid, reconciled and closed. A route selector applies insurance, self-pay, HealthShare or approved marketplace rules. The architecture records state-entry evidence, permitted transitions, responsible party, expiration and exceptions.

Quote Slot and Service Matching

The quote and available appointment or fulfillment slot must be evaluated together because a price may expire before service or depend on site, timing, bundle and payment conditions. After the event, a matcher connects service, claim, invoice or payment records to the transaction. A variance service explains differences in bundle, route, quantity, provider, timing or consumer responsibility.

Financial Reconciliation and Realized Savings

The reconciliation service compares the qualified baseline, quoted and secured amounts, final allowed or paid amount and final consumer responsibility under the same service basis. Realized savings requires completed-event evidence and a defined comparison basis. Reconciled cost and timing evidence selectively update the applicable Financial Twin and journey objects.

5 Next Best Learning and Action Timing

Next Best Learning estimates whether a missing fact, connection or measurement would materially improve the pending decision. Candidate requests are ranked by expected change in uncertainty or option ranking, adjusted for consumer burden, privacy cost, operational cost and time remaining. The system asks only when the expected decision improvement exceeds those costs.

Candidate request	Potential information gain	Burden
Confirm current medication use	High when medication changes risk or pathway eligibility	One short confirmation
Connect current plan	High when cost and network ranking are uncertain	Authorization flow
Collect home readings	High when one clinical value may not represent current state	Repeated measurement
Clarify service location	High when locality or setting changes comparable prices	One short answer
Ask affordability threshold	High when reasonable choices have different consumer costs	One short answer

Decision Windows

Every actionable insight should record when the option becomes available, when it should be reconsidered, when it expires and which evidence could extend or close the window. Action Impact outputs should include expected time to benefit and a monitoring signal. This permits LOLA to distinguish act now, prepare now, monitor and ask a professional from generic recommendations.

6 Divergence Retraction and Calibration

Journey Divergence Detection compares predicted and observed states, timing, costs and actions. Divergence can arise from an incorrect assumption, an action not completed, a new clinical development, source latency, a coverage change or ordinary future uncertainty. The system identifies the affected objects, updates them selectively and records the explanation.

Event	System response
New corroborating evidence	Update confidence and affected event likelihoods
Contradictory evidence	Preserve the conflict and request resolution when decision-relevant
Consumer correction	Add attributed state and recompute dependent outputs
Permission revoked	Block future use and review or retract outputs depending solely on the signal
Forecast divergence	Identify failed assumptions and update affected journey objects
Observed outcome and final cost	Score forecast and cost error and submit to calibration workflow

Calibration Design

Individual updating should use hierarchical methods because one person rarely produces enough outcomes to estimate an independent model. Cohort calibration tests whether stated probabilities match observed frequencies for defined populations and horizons. Cost calibration requires service, setting, bundle, locality and payment-route matching. Workflow evaluation measures comprehension, corrections, actions, burden and escalation separately from predictive performance.

Purpose Scoped Shared State

Consumer, provider, sponsor and operations views derive from the same versioned state but expose different fields and actions. Policy checks enforce purpose, recipient, duration, minimum necessary data, professional boundaries and revocation. Person-directed signals and their derived forecasts remain blocked from underwriting, adverse eligibility, individualized rate setting and risk selection.

7 Architecture and Controls

Service	Responsibility
Consent and identity	Subject resolution source authorization purpose recipient duration and revocation
Evidence normalization	Terminology units duplication provenance conflict and Temporal Evidence Vector
Feature registry	Versioned transformations lineage missingness and leakage controls
Model registry	Intended use version validation population performance and monitoring
Policy engine	Allowed output professional review prohibited use and organizational firewall
Explanation service	Grounded rationale evidence timing uncertainty sensitivity and alternatives
Action and outcome services	ClearPrice scheduling plan state monitoring completion final cost and outcome

Model Execution Contract

- Inputs must carry evidence state temporal vector permission and lineage
- Outputs must carry intended use target event horizon decision window model version and uncertainty

- High-impact recommendations must pass a policy check and support professional escalation
- Language model outputs must remain grounded in retrieved evidence and structured model results
- Every state transition action and outcome must remain auditable and reproducible from its versioned inputs

8 Validation Plan

Evaluation domain	Illustrative measures
Evidence integrity	Identity error temporal-field completeness provenance coverage conflict retention and revocation propagation
Temporal value	Forecast lead usable decision time source latency freshness error and expired-option suppression
Prediction	Calibration discrimination error by horizon subgroup and missingness condition
Action impact	Conditional effect error causal versus associational labeling and monitoring completion
Cost	Range coverage absolute error bundle mismatch locality payment route and final-price reconciliation
Human factors	Comprehension correction burden action completion trust and escalation
Operations	Drift alert latency rollback incident response availability and audit completeness

A functional alpha should use synthetic data and bounded rules to demonstrate data contracts, temporal vectors, selective graph updates, retraction, price comparison and explanation. Retrospective development should follow with pre-defined cohorts and leakage controls. Prospective pilots should constrain intended use, monitor incidents and measure whether the information improves real decisions.

9 Technical Differentiation

The technical distinction lies in the ordered interaction among components. Authorized observations receive event-relative temporal and evidentiary states. Those states update a governed evidence graph and selected regions of an adaptive journey graph. The system evaluates decision windows, information value, action effects, personal utility and financial consequences. Later observations and revoked permissions propagate through recorded derivations. Outcomes and final costs recalibrate the applicable models.

Patentability cannot be inferred from this description alone. Prior-art and claim analysis should focus on the exact data objects, ordered processing steps, selective update behavior, permission

retraction and measurable technical results. Feature construction, ranking weights, timing rules, provider qualification and calibration data may warrant trade-secret protection.

Proposed Technical Claim Center

A versioned evidence and outcome journey system that assigns authorized observations event-relative timing and evidentiary attributes; selectively updates dependent current-state, pathway, action and financial objects; calculates decision windows and the value of missing information; maintains route-specific transaction states through fulfillment and reconciliation; propagates correction or revocation through derivation lineage; and recalibrates only the affected models from observed actions, events, outcomes and costs.

References

- 1 HL7 International FHIR Release 4 [View source](#)
- 2 HL7 International FHIR R4 Provenance [View source](#)
- 3 HL7 International FHIR R4 ExplanationOfBenefit [View source](#)
- 4 HL7 International International Patient Access Implementation Guide [View source](#)
- 5 Centers for Medicare and Medicaid Services Interoperability and Prior Authorization Final Rule CMS 0057 F [View source](#)
- 6 National Institute of Standards and Technology Artificial Intelligence Risk Management Framework [View source](#)
- 7 National Institute of Standards and Technology Privacy Framework [View source](#)
- 8 US Food and Drug Administration Clinical Decision Support Software Guidance [View source](#)
- 9 Federal Trade Commission Health Breach Notification Rule Guidance [View source](#)
- 10 US Department of Health and Human Services Consumer Health App Privacy Guidance [View source](#)
- 11 Assistant Secretary for Technology Policy Decision Support Interventions Resource Guide [View source](#)
- 12 US Food and Drug Administration Transparency for Machine Learning Enabled Medical Devices [View source](#)
- 13 United States Patent and Trademark Office MPEP Section 2131 [View source](#)
- 14 United States Patent and Trademark Office MPEP Section 2141 [View source](#)

About InXite Health

InXite Health is a consumer-first personal health intelligence and journey-orchestration platform. LOLA by InXite serves as the intelligent health companion and navigator. ClearPrice helps consumers find, compare and secure qualified prices for medical procedures, services, medications, supplements, alternative pathways and related products. InXite connects consumer, provider and population perspectives through governed evidence, coordination and learning.

Publication and Claims Notice

This controlled technical brief describes a proposed architecture for counsel, engineering and authorized partner review. It is not approved for public technical distribution until patent counsel confirms the filing and disclosure

sequence. It is not medical advice and does not claim that every capability is implemented, validated or commercially available.

Published by InXite.Health, a division of InXite Data Systems LLC.