

## Case Study

# How HCA Modernized Direct Secure Messaging with DataMotion—Without Downtime

**Industry:**

Healthcare  
(Integrated Delivery Network)

**Organization:**

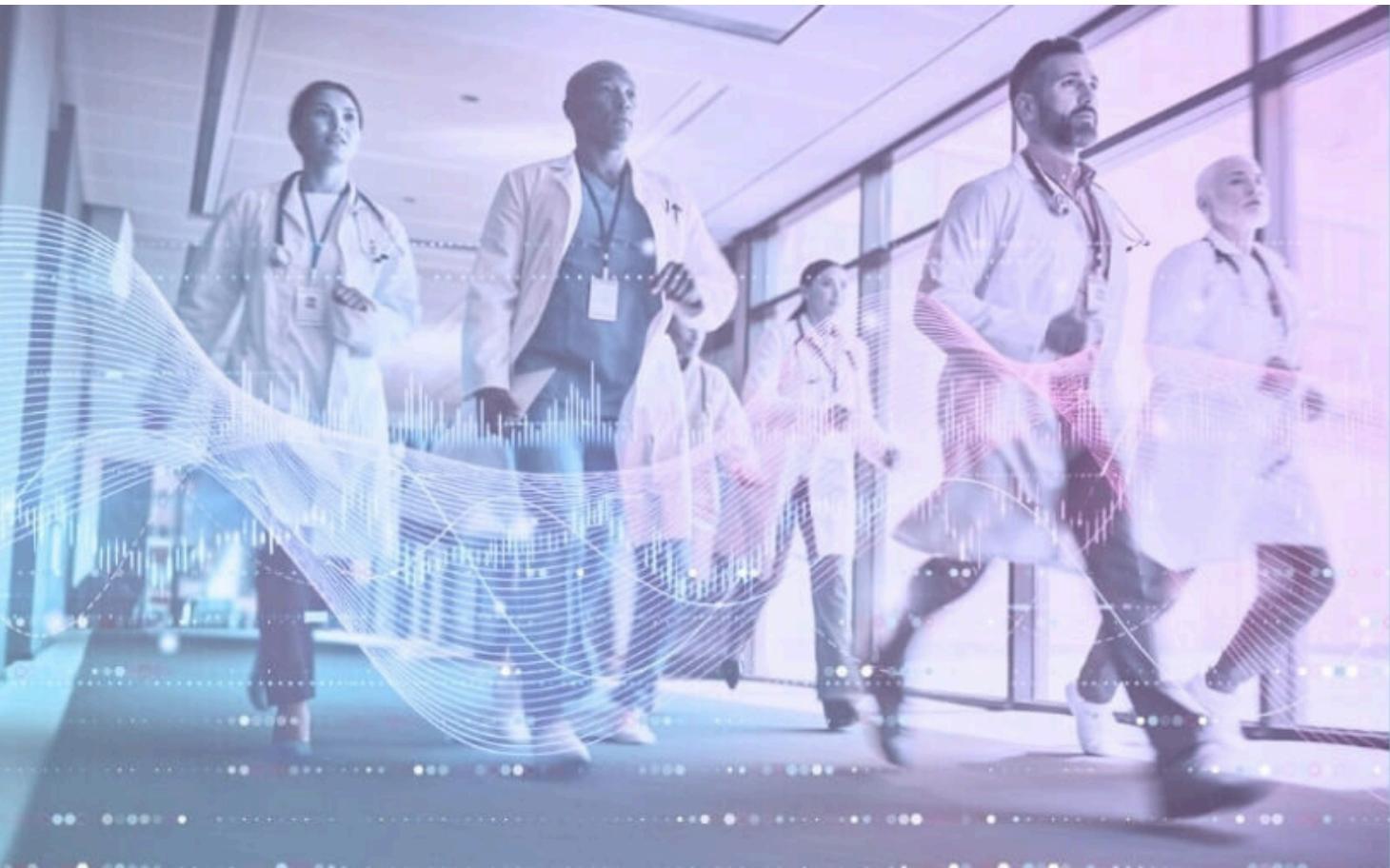
HCA Healthcare  
(largest hospital system in the U.S.)

**Solution:**

DataMotion HISP (Direct Secure Messaging), DPP Provisioning, Apigee X integration, Epic XDR enablement, HPD directory feeds

**Cutover Date:**

December 17, 2025



## Case Study

### Executive Summary

HCA Healthcare modernized its Direct Secure Messaging (DSM) infrastructure by replacing its long-standing DSM partner with DataMotion's HISp—without downtime, disruption, or loss of interoperability.

Across five major programs—HIE Connect, Epic (XDR), MyHealthOne, Provider Hub (HPD), and cross-organizational DNS and certificate management—HCA consolidated more than 400 sending addresses under two primary domains (ccd.hcadirect.net and pen.hcadirect.net). The migration eliminated per-facility credential sprawl through a single Basic Auth alias, standardized payload handling across CDA/HL7, MIME, and XDM, and improved provider directory hygiene through automated HPD feeds.



The cutover was executed on December 17, 2025 using a production “handshake” test and a staged ramp methodology—ensuring zero downtime while transitioning mission-critical clinical messaging at national scale.

**The result:** predictable economics, simplified operations, and standards-aligned interoperability—without risking patient care or clinical workflows.

Our priority was a seamless transition with zero disruption to patient care. DataMotion delivered exactly that—while giving us the scalability and security we needed for the future.

— Kelly Simmons, Director, Clinical Interoperability

### Customer Context



#### Scale & Complexity

HCA operates hundreds of facilities and national programs, each supporting distinct messaging workflows—including clinical notifications, transitions of care, patient-facing communications, and provider directory publishing. These workflows span multiple EMRs, integration layers, and trust communities, all of which must operate reliably at scale.



#### Legacy Constraints

While the prior DSM solution was technically functional, it introduced operational friction and growing cost uncertainty. Per-facility credentials increased automation fragility, vendor-specific payload behavior complicated interoperability, and pricing structures exposed HCA to unpredictable overages as volumes scaled.

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**The collaboration was proactive and solution-focused. Every challenge was met head-on, and the team made sure we stayed on track for a complex, multi-program cutover.**

— Ramrao Patil, Clinical Messaging Project Lead



### Strategic Goals

HCA leadership sought to:

- ✓ Lower unit economics and reduce overage exposure
- ✓ Simplify provisioning and credential management
- ✓ Standardize payload behavior to industry norms
- ✓ Preserve interoperability and reliability at national scale

The challenge was not fixing something “broken,” but replacing something no longer optimized for scale, predictability, or long-term control.

## Challenges



### Multi-Program Orchestration:

Four distinct message origination paths—HIE Connect, Epic via XDR, MyHealthOne, and Provider Hub—had to converge on a single HISP with consistent behavior and reliability.



### Credential Sprawl:

Hundreds of facility-level addresses required hundreds of passwords or session keys, increasing operational risk and complicating automation.



### Payload Interoperability:

Patient Event Notifications (PEN) required support for both vendor-specific MIME headers and standards-aligned XDM attachments. Epic XDR imposed strict requirements for patient demographics, document IDs, and client certificates containing private keys.



### DNS Blast Radius:

Flipping base nameservers for hcadirect.net risked cascading impact across all subdomains. A poorly executed cutover could spike queuing, error rates, or message loss.



### HPD Publishing Hygiene:

HCA publishes facility-level addresses (not individual providers) to prevent PHI misrouting. Directory feeds needed to remain accurate, consistent, and complete at scale.



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### Solution

#### DataMotion HISP + DPP (Provisioning)

- ✓ Single Basic Auth alias for outbound sends—one credential supporting ~400 “from” addresses across pen.hcadirect.net and ccd.hcadirect.net.
- ✓ DPP portal for organization setup, certificate issuance (3-year org certificates), domain management, and bulk user import.
- ✓ Trust Agent onboarding handled via notarized Declaration of Identity (DID); administrative users did not require DID.

#### HIE Connect (Outbound & Inbound via Apigee X)

- ✓ Outbound workflows used SendMessage (XML CDA) for CCDs and SendMime for PEN.
- ✓ Inbound traffic proxied through Google Apigee X with OAuth2 token acquisition, followed by delivery POSTs.
- ✓ Acknowledgment returned via HTTP 200 with XML status.
- ✓ Payload guardrail enforced at ~15MB pre-encryption (≈21MB on wire).

#### Epic XDR

- ✓ Bidirectional XDR using ProvideAndRegisterDocumentSet.
- ✓ Epic required a client certificate containing a private key for outbound signing.
- ✓ Endpoint cleanup (removal of CE suffixes) and long-term certificates ensured stability.
- ✓ DataMotion validated demographics and document IDs before converting inbound traffic to Epic’s edge protocol.

#### MyHealthOne (MHO)

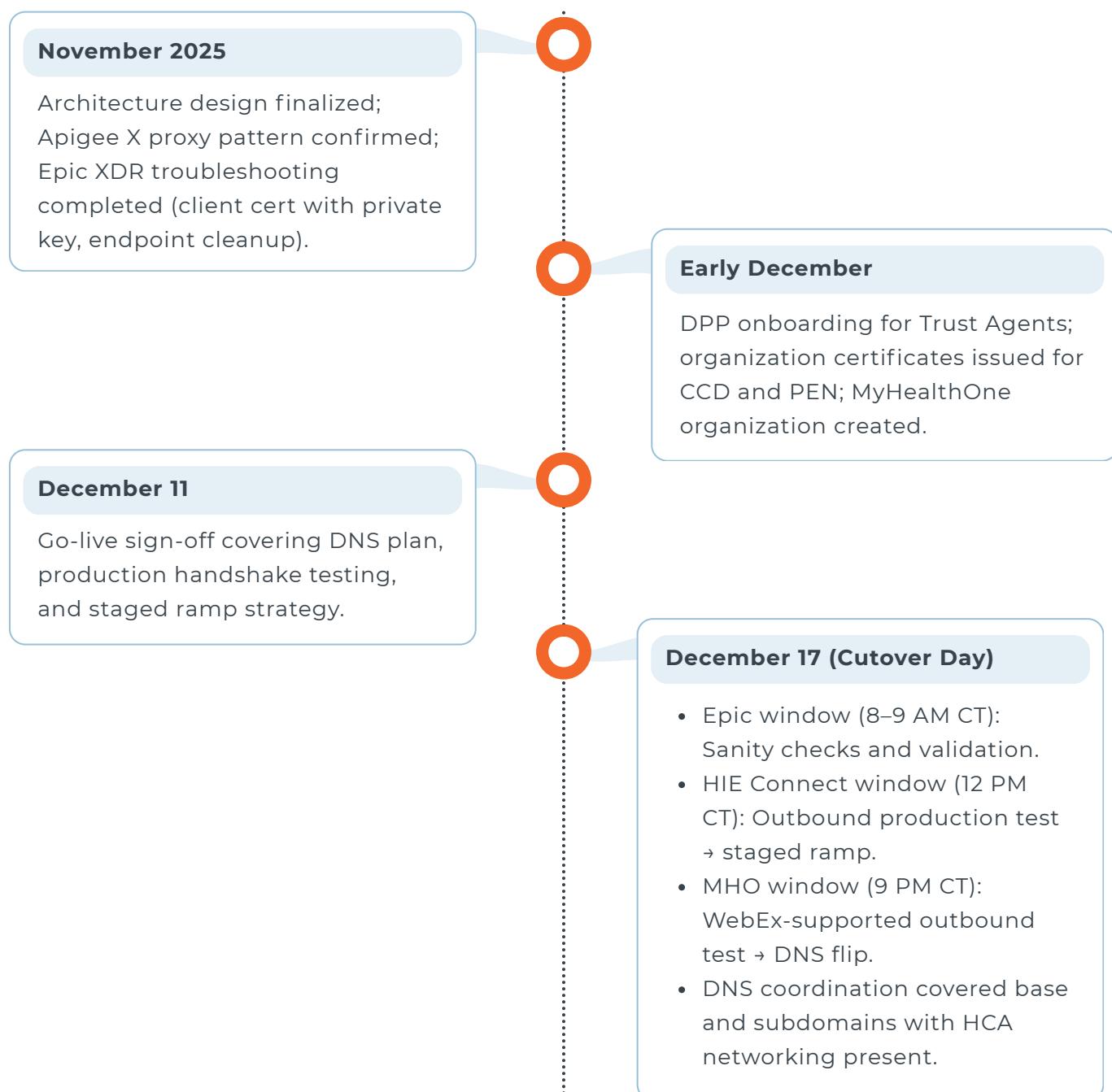
- ✓ Migration from SOAP toward REST with a single “from” address model.
- ✓ Late-night deployment window enabled safe testing.
- ✓ DataMotion provided a temporary production test domain to support pre-cutover validation.

#### Provider Hub / HPD Feeds

- ✓ SFTP-based daily delta feeds and periodic full directory files.
- ✓ NPIs encouraged for matching accuracy.
- ✓ Publishing intentionally focused on facilities to prevent clinical misdelivery.

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## Implementation &amp; Timeline



Integrating OAuth and Apigee X into our messaging workflows was critical. DataMotion's technical approach gave us confidence in both security and performance at scale.

— Alok Chandra, Software Engineering Manager

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## Cutover Methodology

## 1 Production “Handshake” Test

- HIE Connect outbound → DataMotion interop address (Basic Auth + MDN validation).
- MHO outbound → temporary production test domain.
- Epic inbound/outbound → test documents with valid demographics and IDs.

## 2 Staged Ramp

- Trickle → Pause → Validate → Resume approach minimized blast radius and allowed rapid anomaly detection.

## 3 Monitoring &amp; Triage

- DataMotion monitored MDNs, inbound webhooks, XDR responses, and queues.
- HCA controlled ingestion services to regulate volumes during validation.



**“Test small, pause, verify, then resume.”**

— Joint cutover principle enabling a risk-controlled DNS transition

## Results

## Executive Outcomes

Zero Downtime Migration	No service interruption during cutover. MDNs, acknowledgments, and downstream clinical updates continued uninterrupted.
Predictable Economics at Scale	Consolidated pricing and higher committed volumes reduced overage exposure, achieving an effective rate of approximately <b>\$0.0125 per message.</b>
Operational Simplification	Hundreds of credentials were replaced with a single alias, materially reducing risk and administrative overhead.
Standards-Aligned Interoperability	PEN standardized on XDM attachments while maintaining MIME where required. Epic XDR packaging validated consistently.

## Technical Proof Points

~ 400

**Sending Addresses**

consolidated under two domains



**Automated HPD Directory**

hygiene via daily delta and full feeds



**Controlled DNS Cutover**

using staged ramp methodology

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**Predictability matters in healthcare. The utilization monitoring and alerting framework ensures we can manage volumes without surprises—something we didn't have before.**

— Nicholas Meyer, Sr. HIE Clinical Analyst

## Metrics at a Glance

**Addresses****Migrated:** ~400+**Auth Model:** One

Basic Auth alias

**Payloads:**

CDA/HL7, MIME, XDM; Epic XDR

**Cutover Date:**

December 17, 2025

**Org Certificates:**

3-year term via DPP

**HPD Feeds:** Daily

delta + periodic full (SFTP)

## Lessons Learned

- ✓ **Standards First:** XDM attachments for PEN reduce vendor lock-in and ease interop.
- ✓ **Reduce Credential Friction:** Alias-based auth materially improves reliability.
- ✓ **Respect DNS Blast Radius:** Treat DNS like a release—validate in production and ramp carefully.
- ✓ **Provisioning at Scale Matters:** Bulk onboarding streamlines long-term maintenance.
- ✓ **Certificate Discipline Is Non-Negotiable:** Epic's private-key requirement must be codified in runbooks.

## What's Next

➡➡ Expand DataMotion's DPP for ongoing day-2 operations.

↗↗ Enhance observability with MDN and volume analytics.

➡➡ Replicate the blueprint across additional HCA workflows.

↗↗ Publish companion content for leadership, sales, and marketing enablement

## Book a Demo

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