A Strategic Guide for US Healthcare Supply Chains

Your Guide to Compliant, Reliable Supply Chains

Locus

Locus

Executive Note

Across healthcare, one thing is clear: rules now expect proof in motion, not paperwork after the fact. This calls for clean data first, proof along the way, and less friction later. In U.S. healthcare, the Drug Supply Chain Security Act (DSCSA) completes its journey in 2026, requiring trading partners to share and verify serialized drug data electronically and on time. Every medicine pack must be traceable with digital handshakes between partners before it moves further. That turns what used to be a back-office chore into a release condition on the floor, raising the bar for reliability for patients and providers alike.

This paper explains what we mean by turning rules into reliable operations. It's the shift from "document later" to "enforce now," carried out through three practical ideas with the help of Locus: a single operational record everyone works from, in-plan validation so bad data doesn't reach the dock, and real-time execution so rules trigger real actions—not just alarms.

Sector Blueprint: North America Healthcare

From DSCSA to dependable service

By November 2026, DSCSA expects serialized, electronic product tracing and timely verification as a normal condition of movement. For many wholesalers and large dispensers, this is an extension of progress already made. For smaller nodes, it is a step change: they must move from "paper tolerated" to digital by default.

The advantage of doing this well goes beyond the rule. It improves recall readiness and counterfeit resilience, and reduces patient risk during shortages or disruptions.

What that looks like on the floor

Three operational realities define what DSCSA compliance looks like in practice:

Serialized verification at the release gate. If data is inconsistent or missing, the carton doesn't advance.

Cold-chain thresholds tied to automatic plan changes. When thresholds are breached, the system changes the route or asset, and everyone sees the update.

Custody and ePOD in one record. When a handoff occurs, custody and ePOD land in the same record the planner used, no re-entry.
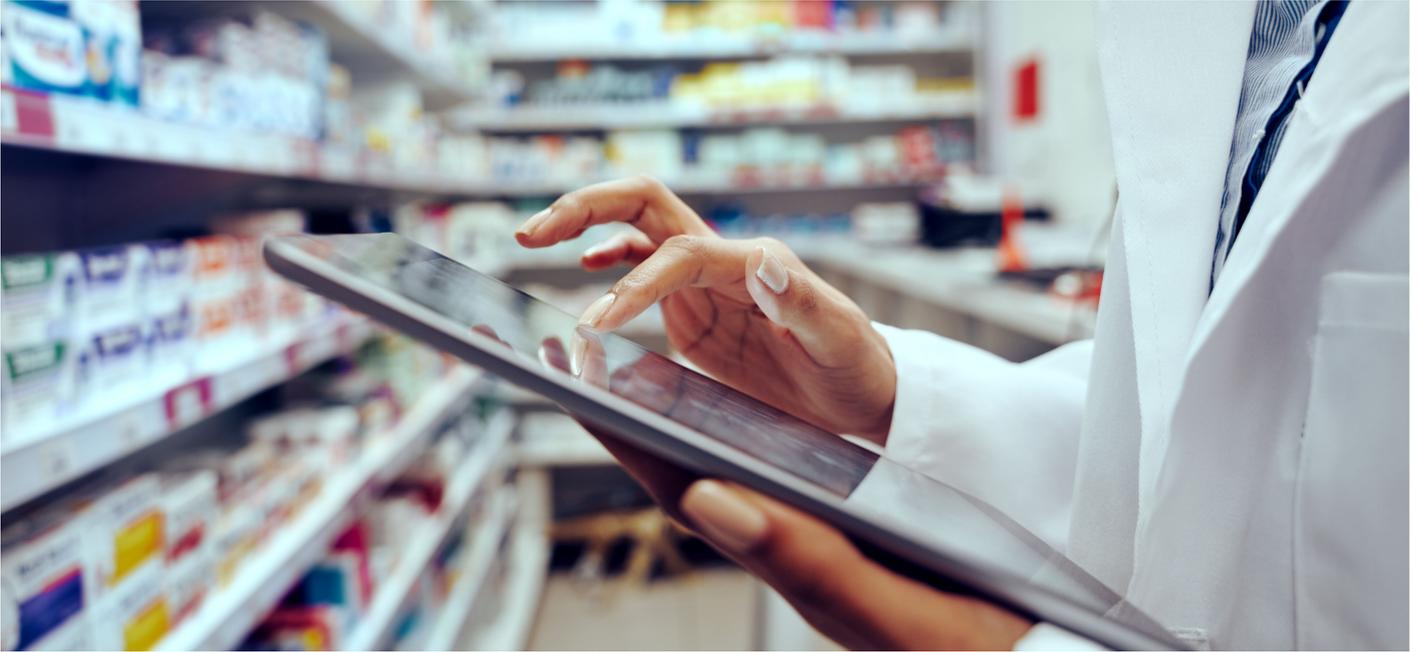
Margins are tight while expectations rise

In healthcare logistics, the cost of small operational misses compounds quickly. A failed verification hold delays patient care. A cold-chain breach wastes product and triggers regulatory scrutiny. A missed handoff creates reconciliation overhead that slows every downstream partner. The expectation from providers, payers, and patients is zero tolerance for avoidable failure.

The stakes are also asymmetric. A single cold-chain breach can render an entire shipment non-distributable. A serialization gap at one node can halt a chain that otherwise runs cleanly. And because healthcare logistics connects directly to patient outcomes, the reputational and regulatory cost of a failure is rarely proportionate to its operational cause. Getting this right thus becomes a patient safety question, not just an efficiency one.

The technology is ready, adoption is the gap

Serialization, digital documents, and modern planning engines are already here. What often fails is the handoff between insight and action: a rule violation shows up on a dashboard, but it doesn't change the route, asset, or slot in time. In 2026, leaders stand out by ensuring trusted data automatically changes how work is executed, and that each change leaves proof behind.

The gap is organisational, not technical. Teams that have invested in serialization infrastructure often find that the data exists but doesn't travel: it sits in one system while the route executes in another, and the handoff between them is manual, slow, or inconsistent. Closing that gap means building a model where compliance data and operational data are the same record, not two systems that occasionally sync.

What "good" looks like in action

A reliable healthcare network consistently demonstrates four habits. Together, they are the operational expression of the model.

Traceability with proof: Every unit or delivery has a searchable trail of identity, custody, and condition, and each handoff is visible to the partner that needs to see it. In healthcare, that includes serialized checks for suspect products. The audit trail is produced by the run itself, not reconstructed from emails.

What this means operationally: traceability is not "after the fact." It is embedded at the point where work is released and accepted. The result is faster response when something goes wrong, and less downstream chaos when something simply doesn't match

Exception prevention at the edge: In cold supply chains, when temperature drifts, a policy reroutes or swaps the asset. The key is that exceptions don't wait to become incidents; they're addressed while the run is still salvageable.

What this means operationally: the system does more than surface risk—it changes the plan early enough to protect integrity.

One plan that updates with reality: Contact centers, planners, stores/depots, and field teams share the same live state. A decision made in planning is visible on the floor; a proof captured in the field is visible to the teams coordinating care and service. Disputes and duplicate effort shrink.

What this means operationally: instead of "two truths" (a planning truth and a field truth), you get one living record that reduces rework and time lost in reconciliation

Right-first-time documents and labels: Declarations, labels, and required fields are generated from governed truth (e.g., SKU attributes, batch/lot data) and validated before release. If anything is missing or out of spec, the job does not advance. This prevents terminal holds and late-stage rework.

What this means operationally: correctness is checked at the point where it's cheapest to fix, not when the clock is already ticking downstream.

Three moves that make compliance practical

These moves translate the DSCSA intent into a repeatable operating model—one that can scale across sites, partners, and volumes without creating more manual work.

Move 1: Unify data to decide action

Start with a single operational record that connects orders, product truth (SKU, batch/lot, cold-chain), compliance fields, partners, assets, and lanes. Make planning the actuator of compliance: if required data is incomplete, the plan doesn't release. Decisions execute inside the run, and the system keeps the proof.

Move 2: Prevent exceptions at the edge

Place verification where work happens. Before movement, run digital checks. During movement, apply policy actions for temperature rules that actually change the route or asset. At handoff, verify identity and custody inside the same system that records proof.
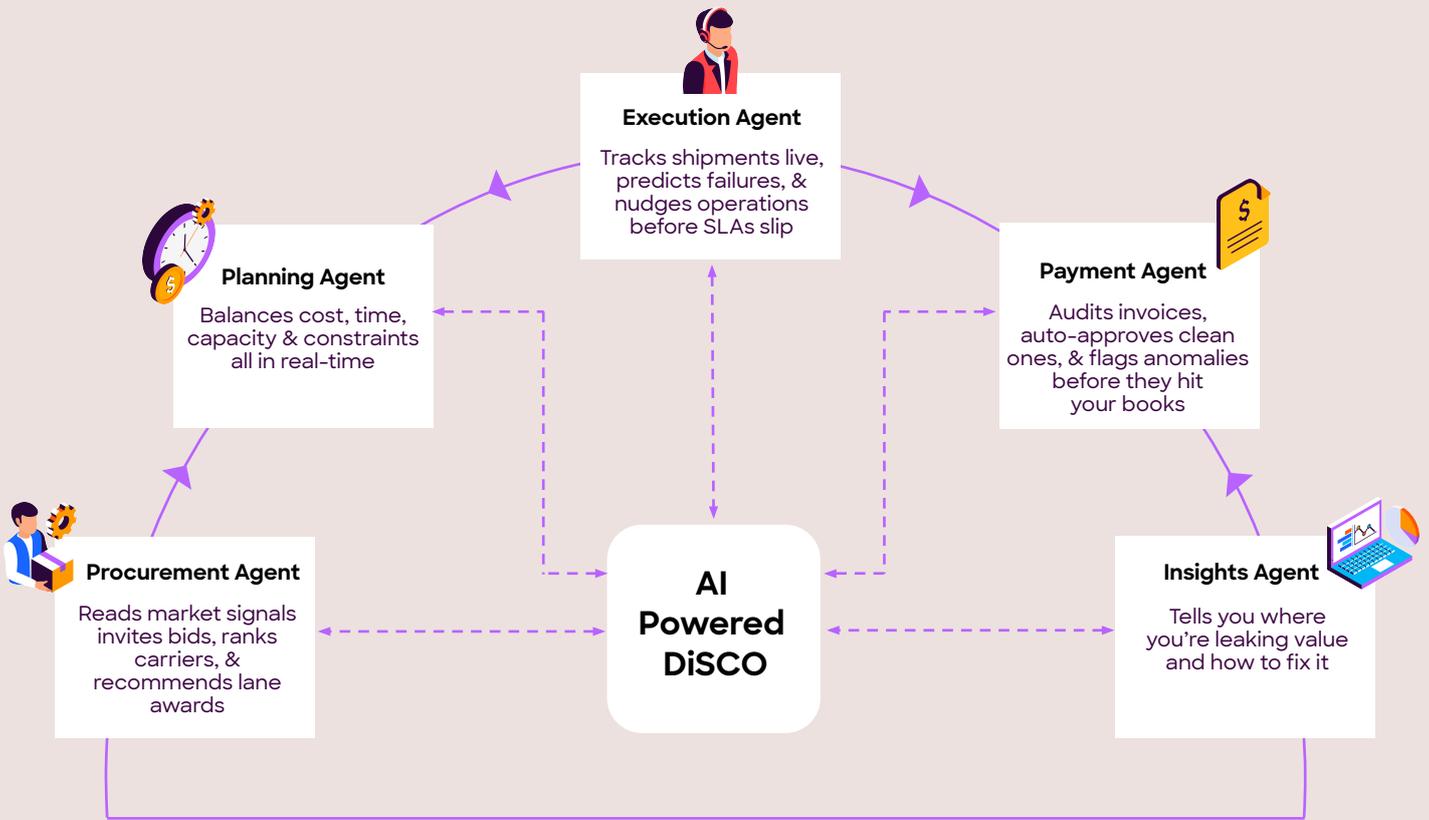
Move 3: Design adoption so it sticks

Change that adds dashboards but doesn't remove work will stall. Roll out in narrow waves with clear definitions of done. Give managers and field teams the same live view and a small, stable KPI set, then train against the top failure modes until responses are reflexive.

How Locus turns policy into proof in motion

Locus connects orders, product truth, compliance fields, partners, assets, and lanes into one live record, validates labels/serialization before release, and enforces rules while work is moving. DiSCO (Digital Supply Chain Officer) is the agentic AI that powers this run—sensing issues, deciding the next best move, and acting in the tool, with an audit trail by default.

In the same operating layer, the platform supports procurement, planning, execution, payment, and insight workflows, so proof isn't fragmented across tools and teams.

Execution Agent

Tracks shipments live, predicts failures, & nudges operations before SLAs slip

Planning Agent

Balances cost, time, capacity & constraints all in real-time

Payment Agent

Audits invoices, auto-approves clean ones, & flags anomalies before they hit your books

Procurement Agent

Reads market signals invites bids, ranks carriers, & recommends lane awards

AI Powered DiSCO

Insights Agent

Tells you where you're leaking value and how to fix it

For healthcare operations specifically, Locus:

✓ **Orchestrates procure-to-pay on a modular TMS:** one place to plan, execute, and prove.

✓ **Validates serialization and documentation pre-tender,** so bad data never ships and non-compliant cartons never advance.

✓ **Automates workflows & predicts risk (SLA, cold-chain, capacity),** then applies live policy enforcement, reroutes, and asset swaps when thresholds are breached.

✓ **Optimizes fleet mix across captive/3PL/crowd** and reallocates orders intelligently during spikes or disruptions.

✓ **Handles reschedules via natural-language prompts,** keeping operations and communications in sync.

Locus

Use Case: Pharma Diagnostics Network

A leading diagnostics provider operating in 190+ cities with ~4,000 field agents digitized end-to-end home collections with the help of Locus. What changed in the operating model:

A custom mobile app replaced manual steps; orders from app/web/call center were auto-batched, optimized, and assigned with real-time tracking and ePOD.

Automated alerts (SLA risk, low battery, customer events) enabled proactive interventions.

Customers received live updates and confirmations, lifting trust and CSAT.

The routing engine protected the 2–3-hour lab window to maintain sample integrity.

A control dashboard provided live plan-vs-actual across routes, fleet, and performance.

THE RESULT Faster routes, no temperature breaches, and cleaner proofs in the same operational record used by planners and contact centers.

What locus delivers in practice

8–12%
reduction in freight costs

40%
faster planning cycles

10–15%
SLA improvement

15%
lower emissions

Automation builds structure; agentic AI adds judgment and adaptability.

A Future-Focused Operational Outlook

DSCSA's expectation of serialized, interoperable proofs won't recede after November 2026; it will deepen as enforcement matures and trading partners raise their own baseline requirements. Every node that is not digitally ready will become a friction point and a liability for the networks it serves. Winners won't be those with the most dashboards; they'll be those whose decisions reach the dock in time and leave a clean trace. With a single operational record, in-plan validation, and edge-executed policies, policy becomes action, and action becomes proof.

Locus

Battle-tested in 350+ deployments across 30+ countries, Locus is an agentic TMS for all-mile, all-channel, trusted by enterprises like Unilever, Nestlé, CP Axtra and many more.

The platform unifies orders, capacity, and carriers into a living plan, with AI co-pilots guiding real-time decisions to protect SLAs and reduce waste.

In 2025, *Locus joined Ingka Group* (IKEA Retail), accelerating its mission to build faster, smarter, and greener supply chains.

Since 2015, Locus has powered billions of deliveries with measurable savings and sustainability impact. Headquartered in Bangalore with teams across the U.S., U.K., UAE, and SEA, its 170+ experts are redefining how the world moves goods across all channels and all miles.

1.5B+
Total deliveries
optimized

17M+ KGs
Reduction
in GHG emissions

$320M+
Savings
in logistics costs

GROWTH,
DELIVERED.

www.locus.sh