



Healthcare Logistics

Building resilience through a balanced transport network

The case for resilient healthcare supply chains

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Healthcare supply chains are operating in an environment where capacity constraints, disruption, and changing demand can put even well-established transport plans under pressure.

For many organisations, the long-term focus is therefore shifting towards more resilient networks and better-optimised transport flows. Sea Logistics can play an important role within that strategy, alongside Air Logistics, Road Logistics, and other solutions, when the product, lane, timing, and quality requirements are right.

Why resilience starts with the right transport mode

No single transport mode can meet every healthcare requirement. Air Logistics remains essential when speed, product launches or patient needs are the priority. Sea Logistics can provide additional capacity and flexibility for suitable planned flows, helping organisations build a broader and more resilient transport network.

The aim is not to favour one mode of transport over another. It's to optimise transport flows across the network and match each shipment with the most appropriate solution. That can include Sea Logistics for qualified lanes, Air Logistics consolidation where it improves planning and efficiency, and continued use of Air Logistics for urgent or time-sensitive movements.



Proof in practice

A pharmaceutical customer worked with Kuehne+Nagel and Cold Chain Technologies to assess whether selected temperature-sensitive products could move by sea without compromising quality. Through pilot shipments, risk assessments, packaging enhancements, and extensive quality validation, the teams gradually built confidence in suitable Sea Logistics lanes.

The work established a repeatable framework for evaluating transport options based on data, stakeholder collaboration, and quality approval. It shows how Sea Logistics can be integrated thoughtfully into a broader healthcare network, with each flow assessed on its own requirements.



Quality turns a transport option into a qualified lane



For temperature-controlled healthcare products, adding or adapting a transport flow can't be based on capacity, cost or transit time alone. The product, lane, packaging, handover points, monitoring approach, and contingency plans must be understood before live product moves.

That's why quality must be involved from the very beginning. A proposal may look operationally sound, but it can't progress without quality agreement. This is why lane risk assessment (LRA) development is deliberate, documented, and cross-functional.

- 1 Define the scope**
Agree the product, lane, operating conditions, and decision criteria. The objective is to strengthen the transport network, not to apply a blanket approach.
- 2 Assess the end-to-end lane**
Map temperature exposure, route characteristics, handovers, trans-shipment considerations, capacity risks, and contingency options.
- 3 Qualify through pilots**
Build confidence through test runs, documented learning, and progressive refinement before scaling a new or adapted flow.
- 4 Align every stakeholder**
Keep quality, logistics, procurement, operations, the logistics provider and relevant origin and destination teams equally informed.
- 5 Conduct a comprehensive quality review**
Verify that risk assessments, qualification results, pilot data, operating procedures, and contingency arrangements meet defined requirements and are formally approved.

Visibility supports better transport decisions



Connected smart reefer containers and IoT devices provide temperature, location, and geofencing information while a shipment is moving. This gives operational and HyperCare teams, who closely monitor critical shipments in-transit, earlier insight to proactively assess alerts, manage and/or intervene if deviations occur, and coordinate next steps sooner.

The value, however, doesn't come from simply collecting data. It comes from turning that data into practical learnings. Insights gathered during pilot and live shipments can

help refine LRAs, strengthen contingency plans, and support more informed decisions across the transport network.

In this way, visibility completes the connection between planning and performance. The LRA establishes whether a lane can be qualified, while ongoing monitoring provides the evidence needed to confirm, review and continuously improve that decision. Technology supports this process, but it does not replace quality governance, cross-functional collaboration or human judgement.

Conclusion

Resilient healthcare supply chains aren't built by shifting from one transport mode to another. They're built by understanding where each mode of transport adds the greatest value and by making those decisions based on product requirements, lane conditions, quality standards, and patient needs.

LRAs provide the structured, cross-functional process needed to evaluate and qualify each lane. Pilot shipments and operational experience build the evidence behind the decision, while smart reefer and IoT visibility help teams monitor performance, respond to deviations, and strengthen future assessments.

When these elements work together, air, sea, and other transport modes can each perform the role they are best suited to play. The result? Not just a different transport plan, but a more balanced, visible, and resilient healthcare network that protects product quality and keeps patient needs at the centre of every decision.



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As the logistics partner of choice for companies worldwide, we deliver tailored, end-to-end supply chain solutions across Air, Sea, Road, and Contract Logistics.

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