

LIMS Selection for a Public Health Lab

CASE STUDY

PROJECT AT A GLANCE

Business Sector:

- Public Health
- Government

Informatics Systems:

- STARLIMS 10

Service Offering:

- Strategic Planning
- Vendor Selection

Elements:

- 2 Global Sites
- 20 Testing labs
- 6 Months
- 2 CSols Team Members

A major state public health laboratory, operating 20 specialized departments across two sites, was held back by a legacy LIMS that wasn't meeting its needs. Although the laboratory's scientific capabilities, ranging from Newborn Screening to Bacteriology and Sequencing, were rapidly evolving, the informatics platform remained static. These factors created functional gaps and increased user frustration, ultimately threatening the efficiency of its critical public health mission.

The client recognized that its current system and processes were not optimal. A transition was needed that would be strategically sound and entirely objective. The client was also building a new lab facility and keeping the existing facility. Therefore, they needed a solution that could support their unique dual-layer requirements: the common needs shared across

all teams and the highly specific workflows unique to each lab.

The client required an independent, expert guide capable of translating complex scientific needs into a rigorous, vendor-agnostic selection process. To navigate this complex selection, the client partnered with CSols Inc., the premier laboratory informatics consultancy in North America.

CSols was chosen for three key strengths:

- **Deep Public Health Roots:** Our extensive track record in the public health and research sectors meant we already spoke the client's language and understood the nuances of the science.
- **Technical Foresight:** By leveraging deep expertise with leading LIMS solutions, CSols could help the client expose hidden risks and avoid common pitfalls that derail

large-scale informatics projects. CSols becomes the client's advocate and provides strategic and technical recommendations.

- **A Proven Framework:** The client valued our data-driven selection process—a methodology designed to ensure the final system aligns perfectly with both immediate operational needs and long-term strategic goals. In addition to understanding the client's unique laboratory needs, CSols recommends and applies industry, laboratory, and informatics best practices.



Objectives & Challenges

The primary objective was not simply to replace a LIMS, but to future-proof the state's public health infrastructure. This transition coincided with the construction of a brand-new laboratory facility, providing a rare clean slate opportunity. The client aimed to move beyond its legacy of manual processes and reevaluate every workflow to maximize efficiency through modern automation. The goal was clear: select a platform that would bring all 20 departments into a unified, digital ecosystem while supporting the lab's long-term growth.

The path to a new system was complicated by both past decisions and future deadlines. To succeed, the project had to navigate several high-stakes hurdles:

- **The Ticking Clock:** The selection process faced an aggressive timeline. With state funding for the following fiscal year tied directly to the selection outcome, there was no margin for error or significant delay.
- **A History of Half Measures:** The legacy LIMS had been implemented under a rushed rollout years prior, focusing only on simplified manual tasks. Critical modules for centralizing data—such as chemical inventory, consumables, and equipment management—were never deployed, leaving the organization with limited functionality, fragmented data, and untapped potential.

- **Operational Friction:** Because the previous system was not optimized, many departments had abandoned it or never adopted it as intended. Re-engaging these stakeholders was vital, yet difficult, as their limited availability often clashed with the project's fast-paced requirements.

CSols' Role in the Solution

To meet the state's aggressive timeline and bridge the technological gaps between sites and labs, CSols deployed two strategic informatics consultants to lead the selection. Rather than acting as mere advisors, they became the architects of the lab's digital future, providing the project management rigor needed to keep the initiative on track despite challenges in stakeholder availability.

The CSols team implemented a structured, three-phase methodology designed to transform the lab's manual legacy into an automated, future-ready operation:

- **Visualizing the Transformation**
CSols began by conducting deep-dive stakeholder interviews to capture the scientists' voices and roles. By documenting As-Is workflows and designing optimized To-Be processes, the team didn't just plan for new software, they redesigned the laboratory's operational efficiency for the new facility.

- **Translating Needs into Requirements**

The team synthesized the gathered data points into a comprehensive User Requirements Specification (URS). This ensured that the needs of all 20 departments—from high-volume automation to complex DNA sequencing data—were captured and prioritized.

- **Driving an Objective Selection**

CSols collaborated with the state agency to translate these requirements into a formal Request for Proposal (RFP). To ensure the evaluation was grounded in reality rather than sales pitches, CSols developed custom vendor demonstration scripts that focused on critical requirements. These scripts forced vendors to prove their platforms could handle the lab's specific, real-world workflows, ensuring the state's final decision was based on evidence and objective performance.

Benefits

The partnership between the state lab and CSols culminated in a successful LIMS selection that helped secure the state's funding and set a new future standard for its informatics operations. By the project's end, the laboratory had a formalized RFP and vendor scripts ready for demonstrations.

By minimizing the need for custom coding, CSols ensured the state would benefit from a more stable system with lower long-term maintenance costs and an easier path for future upgrades. Customization efforts were geared primarily toward interfacing with other government agencies and toward a unique portal for clients.

By implementing recommended solutions to address the missing links of the existing system—specifically, sample reception and location, inventory, and infrastructure—the laboratory will have the comprehensive data oversight it previously lacked. As the client transitions into the new facility, this state public health system will no longer

just keep pace; it is positioned at the forefront of laboratory informatics, ready to meet the evolving needs of the citizens it serves.

Beyond the selection, CSols provided recommendations for improvements in the client's day-to-day operations:

- **Streamlined Efficiency:**

Core laboratory processes—from sample receipt to retention—were redesigned and simplified, immediately removing some of the bottlenecks that had plagued the previous system.

- **Centralized Newborn Screening:**

A revamped workflow for Newborn Screening and Follow-up services was built directly in the LIMS that successfully centralized processing and ensured follow-up tasks were captured.

- **Data Integrity through Automation:**

CSols identified key opportunities to eliminate human error by interfacing critical laboratory equipment directly with the LIMS, along with financial reporting and data transfer to other government agencies.

- **Management by Exception:**

The project introduced a result approval-by-exception model, allowing senior scientists to focus their expertise on out-of-range results while automating the administrative review of routine data. This provided more time to process samples and improve patient care across the state.