

# STARLIMS SOLUTION HELPS PRECISION DIAGNOSTICS ACHIEVE COMPLIANCE AND RETAIN CUSTOMERS

The San Diego-based drug testing firm Precision Diagnostics offers next generation saliva and urine drug testing for toxicology and drug compliance monitoring. Established in 2011, the firm works with physicians, hospitals, insurance firms and employers, in areas spanning hepatitis treatment compliance, opioid addiction testing and drug-drug interaction analysis.

Precision Diagnostics installed the STARLIMS Cloud platform for enhanced data security to underpin all aspects of sample tracking and management, and to streamline testing workflows. Critically, STARLIMS' cloud data protection is helping the firm to directly address the growing issue of 'physician burnout', by ensuring that its customers have fast, secure access to regulatory compliant data, public documentation, and analytics, integrated with their existing electronic medical records (EMRs).

In addition to STARLIMS' Cloud data security, its intuitive dashboards, flexible searching, trend analysis and analytics capabilities collectively reduce time spent on manual file searches, data collation and records review, and meet American Medical Association Guidelines for addressing burnout. The platform's configurable dashboards and consoles make it easy for authorized physicians to query current, historical and cumulative test results and associated patient healthcare data for individual patients, or for all patients in one screen, and by different parameters.

## ANALYTICS

According to Greg Ackerman, CTO, Precision Diagnostics' customers benefit from STARLIMS features that are not available through other software. The platform connects directly to government open source data, including the 911 emergency call computer-aided dispatch system, in real time. This feature means physicians, clinicians and psychiatrists will know if a 911 call has been made for one or more of their patients, perhaps for a drug-related emergency. This valuable tool helps to provide data security and a more holistic picture for each patient and patient populations, to help understand, track and manage the U.S. opioid crisis.

Also unlike other cloud data security platforms, STARLIMS offers intuitive analytics capabilities that, with a single mouse click, can identify and highlight individual patients who have unexpected positive, or unexpected negative results, and are skewing patient populous graphs and trends. Physicians and nurses are saved hours of manual searching through EMRs, again helping to reduce the unnecessary computer time that is contributing to burnout, and in parallel providing valuable insight into drug addiction trends within patient populations.

## RELIABLE, SECURE DATA ACCESS

STARLIMS is built on a regulatory compliant (HIPAA), easily configurable platform that ensures network security, data integrity and traceability, and the secure transfer of results and reports between the lab and individual clients. The system ensures access to all underlying data, not just to flat file reports.

The firm also utilizes STARLIMS to automate assay ordering, sample management and assay processing workflows. STARLIMS is inherently flexible, making it easy for Precision Diagnostics to add new clients, change or add new workflows, adapt to changing reimbursement rules, or set in place new compliance rules.

*"Our legacy LIMS was very inflexible, didn't enable direct access to underlying data, and simply couldn't keep up with assay throughput as the company has grown. This resulted in bottlenecks and a poor experience for customers."*

**Greg Ackermann, CTO, Precision Diagnostics**

The firm's legacy LIMS wasn't able to interface directly with some of the most common EMRs, which resulted in the loss of potential customers. The legacy LIMS also struggled to process 600 tests per day. Staff had to work late into the evenings, and over weekends to clear the backlog. In contrast, STARLIMS can keep up with very high testing throughput and provides cloud data protection. Precision Diagnostics is now running 1500-1700 tests per day, with no bottlenecks, and without overstressing existing staff. This nearly threefold increase in throughput comes with an additional reduction in average turnaround time, from about 28 hours to 26 hours. Out of range or anomalous results automatically trigger alerts and retesting, reducing even further the need for manual oversight.

*"STARLIMS can meet our requirements as we continue to grow and expand, whatever our capacity, assay throughput and repertoire. It's always up to date and always working at the speed of the customer. I don't know any other system that would be able to do that."*

**Greg Ackermann, CTO, Precision Diagnostics**

Today, STARLIMS supports Precision Diagnostics' complete operation, from cloud data security to secure tracking of all samples, through to interfacing with liquid handling robots and instruments, and even feeding into customer billing. The system can be easily configured to adapt to specific workflows, including modified dashboards that allow the accessioning team to process samples quickly and efficiently. In 2017 the firm seamlessly transitioned STARLIMS from Verizon cloud to Amazon Web Services (AWS).

Precision Diagnostics Challenges	STARLIMS Solution	STARLIMS Results
How to use informatics to address the growing issue of physician burnout in the U.S., by reducing unnecessary computer time, including data and EMR searches.	STARLIMS offers cloud data protection, search capabilities and analytics in simple to use formats, and provides physicians with a flexible, intelligent platform for deriving required data, graphs, plots, comparisons, patient results and population healthcare trends.	Tangible impact on key computer-related effectors of physician burnout.
The legacy LIMS was unreliable from the perspective of data integrity and compliance.	STARLIMS is fully compliant with all regulatory requirements (HIPAA), and is designed to ensure data integrity through full traceability of data entry, changes and transfer.	Every aspect of Precision Diagnostics' LIMS meets full regulatory compliance (HIPAA) and is easily configured to match changing regulations. All data entry and manipulation is fully traceable and transparent to facilitate auditing and regulatory review.
The legacy LIMS could not interface with common EMRs, such as eClinical Works, resulting in the loss of customers.	STARLIMS can be securely interfaced with all of the EMRs that are used regularly by healthcare practices.	Precision Diagnostics is no longer limited to working only with customers that use specific EMRs. Interfacing STARLIMS with any EMR is fast, secure, and reliable.
Difficulty setting up two way communication with customers for ordering tests and sending results and allowing data mining.	STARLIMS offers easy to set up dashboards and easily interfaces with secure web portals for computer and network security as well as better communication between the lab and customers.	Customers are assured of authorized access to all their results data, in the preferred data formats, via user-friendly consoles, visualization, analytical and comparative tools.
The legacy LIMS offered very limited computer security and restricted the ability to access and analyze underlying data.	STARLIMS scientific data management system (SDMS) repository and analytics functionality makes it possible to access and analyze all assay and patient-related data, and open source public health systems, including 911 computer-aided dispatch.	Customers can derive greater depth of knowledge on drug usage, interactions, toxicity and patient wellbeing, and save valuable hours searching through individual patient records.
Poor laboratory operations efficiency, with slow sample processing, scheduling and results delivery.	STARLIMS oversees all sample management and testing, and integrates with the laboratory's automated instrument workflow, so liquid robot handling and transfer to assay instrumentation is highly automated.	Using STARLIMS has allowed a threefold increase in throughput, with 7% reduction in turnaround times, with minimal manual oversight.
The legacy LIMS system offered inadequate document storage and management capabilities.	STARLIMS and its SDMS offer logical storage, cloud data security, and management of thousands of lab results and reports.	The company can create data repositories that allow customers to search their current and historical results for each patient, and search by any parameter.



starlims.com

**STARLIMS**

Tel: +1 954 964 8663  
4000 Hollywood Blvd, Suite 333 South, Hollywood, FL 33021-6755 USA

**ASIA PACIFIC**

Tel: +852 2793 0699

**CANADA**

Tel: +1 888 455 5467

**FRANCE**

Tel: +33 1 61 37 02 00

**GERMANY**

Tel: +49 2302 915 245

**LATIN AMERICA**

Tel: +1 954 964 8663

**NETHERLANDS**

Tel: +31 72 511 8100

**SPAIN**

Tel: +34 91 902 50 69

**UNITED KINGDOM**

Tel: +44 161 711 0340

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