

Genzyme Genetics: “Lean genes” laboratory transformation project

Improved overall testing 230% overall improvement in testing

Business challenge

Many doctors in the United States rely on the results of high complexity tests performed by Genzyme Genetic’s Westborough facility to help them make life saving decisions. Everyday, the Westborough lab choreographs the movement of hundreds of test samples through a complex web of multiple high tech equipment, routings, technician’s assessments and doctor’s interpretations with extreme professional care and dedication to ensure the accuracy of test results. Genzyme Genetics knows lives depend on it.

Lives also depend on the ability of the lab to return the test results in time. Delays can prove fatal. The lab faced increasing operational challenges in its ability to meet the time commitments demanded by doctors. Increasing volume of tests in recent years and projections for even faster growth in the future meant Genzyme Genetics had to revamp its operations to maintain on-time delivery and grow its market share.

With this in mind, Genzyme Genetics chose Hitachi Consulting as the partner to drive order of magnitude improvement in turnaround time. After a successful partnership, the joint team delivered 18% improvement in Molecular Reproductive Testing and over 230% in Molecular Oncology Testing.

“Lean has made the lab work at a steadier and smoother pace so that the work is better organized.”

Situation

Genzyme Genetics’ Westborough facility is largest molecular laboratory in their network. This particular operation performs high volume, high complexity genetic tests and is responsible for a significant portion of the Genzyme Genetics’ revenue. In preparation for the implementation of a new Laboratory Information System (LIS), the decision was made to simplify and standardize the testing process.

The Lean Genes Project was the first Lean implementation of its magnitude and complexity in Genzyme Genetics. Smaller Lean projects previously conducted at Genzyme Genetics New York, Los Angeles and Santa Fe locations focused on minor improvements within the laboratory. Using a Systematic Lean approach to identify non-value added activities, Hitachi proposed cellularization, implementation of 5S and Kanban techniques for the Westborough laboratory.

Hitachi Consulting possesses a Lean capability that Genzyme Genetics could leverage immediately. The capability of a Hitachi Lean Master

and Genzyme Genetics Black Belt to analyze turnaround time, process data for control and potential relationships helped to identify the best and most cost-effective solution for implementation. Hitachi proposed using a results plan to systematically develop plans, complete actions, track progress and drive accountability through weekly meetings.

Overview

Driven by purpose

The client engagement had four primary objectives:

- Cycle time reduction
- Reduce variation in the testing process
- Process time reduction
- Overall organizational effectiveness

Approach and delivery

Cellularization started with the overall assessment of existing processes. Process mapping coupled with process observation, DILO (Day-In the Life Of), Value Stream Mapping, Green Stream analysis and Spaghetti diagramming provided a new way to uncover potential areas for improvement in the accessioning department and the nucleic acid extraction and testing laboratories. Thorough analysis revealed the best way to implement cells within the testing facility.



“Lean has helped us modulate our workflow to match capacity in the assay lab.”

Cellularization was performed based on the testing technology. Five cells were implemented in the molecular testing laboratory, creating in the future state workflows needed for the system redesign. 5S and Kanban were implemented in the laboratory operation. Key Performance Indicators (KPIs) and Short Interval Controls (SICs) were developed, agreed upon and implemented throughout the organization. A structured problem solving methodology was implemented focusing on preventing the recurrence of the problems utilizing Plan-Do-Check-Act problem analysis.

Potential improvements in the existing meeting structure were analyzed and identified. All departmental meetings were assessed utilizing the “meeting effectiveness scorecard” and provided guidance on ways to improve. Proper guidelines, terms of reference and action logs were developed to prepare attendees for meetings.

Results

The project delivered these significant benefits:

- Improved turnaround time of Molecular Reproductive testing by 18%
- The overall improvement in Molecular Oncology testing exceeded 230%, as a result of various initiatives at the site and Lean Project
- The Accessioning, Extraction and testing laboratories, are now better prepared for the implementation of the new LIS and for future growth
- Implemented 41 KPIs at site, departmental and cell levels, and 18 SICs implemented to better manage hour by hour activities in the Accessioning, Extraction and Testing laboratories
- Improved overall meeting effectiveness by 50%
- Problem solving techniques are now ingrained in the day-to-day activities of the Westborough site
- Workstations reduced by 50%; space consolidation by 13%; steps reduction by 33%

“The project has made me rethink the way I do things.”

About Hitachi Consulting

Hitachi Consulting is the global solutions and professional services organization within Hitachi Ltd., a global innovation leader in industrial and information technology solutions and an early pioneer of the Internet of Things. Hitachi Consulting is a business integrator for the IoT era and a catalyst for digital transformation. Using our deep domain knowledge, we collaborate with clients to help them innovate faster, maximize operational efficiency and realize measurable, sustainable business and societal value. As a consulting-led solutions company, we can help you leverage data as a strategic asset to drive competitive differentiation, customer loyalty and growth. To learn more, visit www.hitachiconsulting.com.