CATHOLIC HEALTH INITIATIVES

Good Samaritan Hospital

Kearney, Nebraska www.gshs.org

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GOOD SAMARITAN HOSPITAL USES LEAN TO CUT TURNAROUND TIME BY 35%

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Abstract

Good Samaritan's Clinical Lab performs approximately 500,000 billed tests per year. TechSolve and Good Samaritan teamed up over several months to assess and document the current processes, inventory, workflow, and layout issues of the Core Clinical Laboratory, Phlebotomy, and Patient Services areas. As part of building a Lean culture within the lab, all staff were trained on Lean so they could participate in identifying and implementing improvements.

The project led to the complete redesign of the laboratory facility using Lean principles. Re-designing the lab in addition to the installation of mobile benches enabled the laboratory to manage demand fluctuations and future growth with greater ease and without substantial cost. To remove delays and unnecessary wait times, processes and workplaces within the lab were standardized. Also, a Kanban system was installed to reduce ordering time and inventory levels and costs.

As a result of their Lean Lab project with TechSolve, Good Samaritan has significantly enhanced the quality and delivery of its patient services. So far, they have achieved:

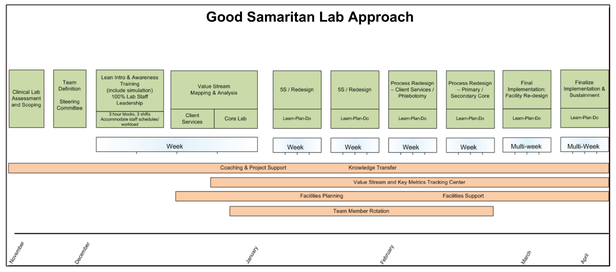
- 49% improvement in turnaround time variation across top eight critical/high-volume tests
- 35% improvement in turnaround time (TAT) across top eight critical/high-volume tests
- 50% increase in percent of tests verified by 7am (start of morning rounds)

Project Background

Good Samaritan Hospital in Kearney, Nebraska knew implementing a hospital-wide Lean Initiative was imperative to furthering their vision of improving health, managing cost, and providing the best value to their patients.

As a large medical center, Good Samaritan's in-house diagnostic laboratory performs over 500,000 billed tests per year. Using their laboratory as the launching pad for their Lean Initiative, Good Samaritan partnered with TechSolve to develop a customized approach and to develop the in-house expertise to sustain and drive future improvements.

Good Samaritan Hospital wanted to drive performance improvements to optimize lab productivity, workflow, and patient and staff satisfaction. Hospital leadership recognized the value of the Lean approach to achieve these improvements. The hospital and Lab staff were excited to begin the improvement effort in the Core Lab to minimize wasteful activity, improve overall turnaround time (TAT), and increase capacity to support their drive for excellence.

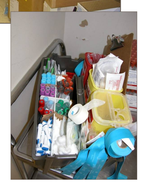


Methods

Prior to Lean Implementation

Current State:
- Excessive inventory quantities
- Non-standard inventory locations
- No standard phlebotomy cart

Current State:
- Congested workspace
- Limited visual management
- Lack of workplace organization

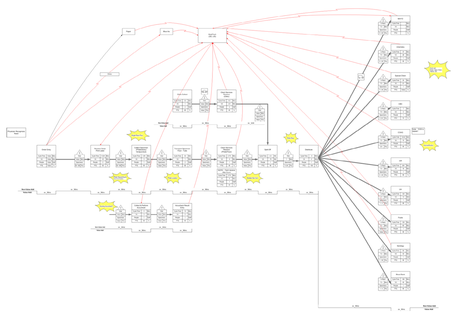


Methods (Cont.)

The TechSolve and Good Samaritan team began with a Value-Stream Map assessment of the current workflow and inventory processes starting from physician order until results verified. A cross functional team was developed of not only lab staff but other support areas and nursing. The team developed a workflow diagram of the Core Clinical Laboratory, Phlebotomy, and Patient Services to provide clarity of where the team should focus the improvement efforts and to develop a detailed work plan for implementation. In addition, the team developed a motto to support their efforts: "One Patient, One Process, One Team".

The assessment served several purposes:
- Defined the current productivity, challenges, and constraints in the lab
- Observed the physical layout, workflow, and typical work processes
- Obtained "real-time" input from the front-line staff and lab management
- Obtained and analyzed baseline performance and quality data
- Gained feedback from nursing and physicians on desired service levels

Good Samaritan Lab VSM



As part of building a sustainable Lean culture within the lab, all staff were trained on Lean so they could participate in identifying and implementing improvements. This allowed the lab to work as a larger team during the improvements.

As part of implementing Lean, the laboratory implemented principles of 5S (Sort, Set-in-Order, Shine, Standardize, Sustain) to eliminate the clutter and breakdown each area to determine what critical equipment and supplies were needed. This allowed the team to understand their processes in greater depth and was needed to begin a complete redesign. Prior to moving equipment the team used cardboard cut outs to ensure the equipment would only be moved once, to it's final location. The redesign was completed quickly without drastic impact to patient care. To provide greater flexibility, mobile benches were installed along with all overhead data and electrical drops. Additionally, the concept of a primary and secondary core was implemented to enable the laboratory to manage demand fluctuations and future growth with greater ease, both without substantial cost.

To ensure unnecessary wait times and sustainment, processes and work activities within the lab were standardized using standard work instructions. To reduce on hand inventory and ordering cost, an inventory Kanban system was implemented. To guarantee success, materials management was leveraged to ensure buy-in and support. The team developed cards that contained all critical information needed to re-order quickly and drastically reduced inventory levels.

Post Lean Implementation

Standardized Phlebotomy Carts

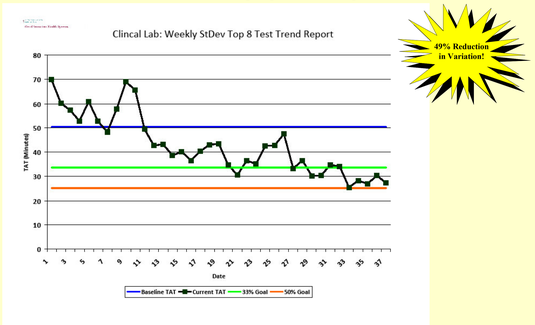
Improved inventory locations at point-of-use

Lean Improvements:
- Improved inventory system by keeping only what is needed at the bench for 48 hours
- Implementation of "Kanban" system to "right size" inventory levels and reduce ordering time
- Improved inventory locations and organization through the use of 5S principles

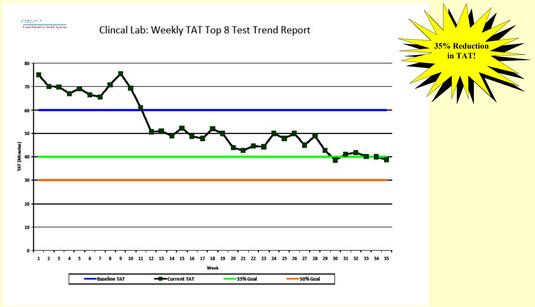
Results and Conclusion

As a result of the Lean initiative, the quality and delivery of patient services were significantly enhanced within the lab. Results include:

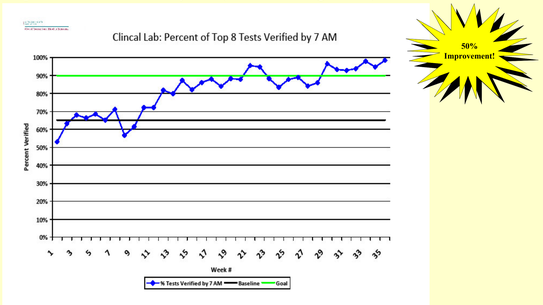
- 49% reduction in turnaround time variation across top eight critical/high volume tests



- 35% improvement in turnaround time (TAT) across top eight critical/high-volume tests



- 50% increase in percent of tests verified by 7am (start of morning rounds)



- Reduced variability across technicians and phlebotomists
- Drastically improved ordering process creating visibility of true inventory needs
- Estimated **$200,000** bottom line impact

The Lean team faced many challenges throughout the project, yet overcame them all. They found that change is not easy, but in the end, the results speak for themselves. They now realize that Lean can provide extraordinary results. Because of the efforts achieved by the lab, the entire hospital has experienced the improvements that can occur with Lean. The improvement efforts within the Lab are only just beginning. The team continues to monitor their success and strives for continuous improvement. The team and staff have realized that Lean is a way of life and is never ending.

One Patient, One Process, One Team

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