

OPC Phlebotomy Services

ABSTRACT

Background:

Patients frequently had long wait times to get blood drawn and long throughput times in the Outpatient Phlebotomy Center (OPC). This resulted in delays, patients leaving without being seen and low customer satisfaction scores. During March of 2009, 1131 specimens were drawn in OPC. 365 of the 1131 specimens had a wait time of greater than 20 minutes (67.7% were drawn within 20 min). To uphold our standard of care and maintain the flow of patients from the OPC to departmental clinics, waiting time for blood draws for at least 90% of patients should not exceed 20 minutes. Our main issue was "Efficient Operation." The need to reduce patient wait times, improve the efficiency of patient flow, and provide better customer service was recognized by laboratory management. Our goal was to improve the laboratory's interaction and services with the patient by identifying opportunities for improvement as we followed the processes for real time defect and waste detection.

Objectives:

Our primary goals were to improve the patient flow, complete at least 90% of outpatient phlebotomy collections within 20 minutes, and reduce the number of customer dissatisfaction incidents during an outpatient visit. We also focused on the following: developing standard work for the staff, increasing staff productivity by reducing non-value-added activities, and re-designing the phlebotomy draw rooms.

Method:

Having success using Lean and Six Sigma methodology and tools in other parts of the lab encouraged us to apply it again in order to develop a solution for all our goals. Process maps and a spaghetti diagram of the current processes were developed by directly observing the phlebotomist and admission performing their tasks. The process maps identified multiple wastes that could be reduced or eliminated. A systematic approach focusing on data collection, analysis and re-design processes was implemented to meet our goals.

Results:

The operational process is now more efficient; patient wait times have been reduced significantly.

Conclusion:

Eliminating waste and streamlining the processes helped the OPC to reduce wait time and improve patient care

INTRODUCTION

The OPC is one of the primary areas of the laboratory providing phlebotomy services to outpatient clinics. There are three phlebotomists and one admission personnel covering this area. In June of 2009, four OPC employees worked part time for three weeks under the direction of a black belt to review current phlebotomy processes and identify areas of waste. The intention was to standardize workflow between different staff by reducing waste, improving efficiency, building metrics to measure staff performance, and encouraging cultural change. Multiple inefficient processes and wasteful practices were identified upon review and evaluation. The current process was affecting our wait time and the quality of patient care.

METHODS

5S

Create Clean, Safe and Organize Environment



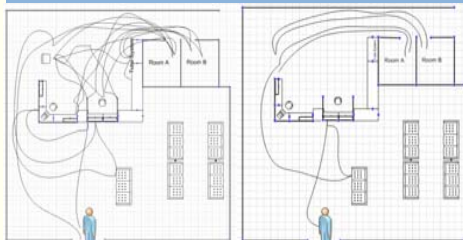
Sort Set Shine Standardization



Sustain

5S tools were used to create a clean, safe, and organized environment in OPC. Items were sorted and arranged according to the station's task and all unnecessary items were eliminated. Work areas were kept clean, and a revised 5S weekly audit helped stabilize and sustain the workflow.

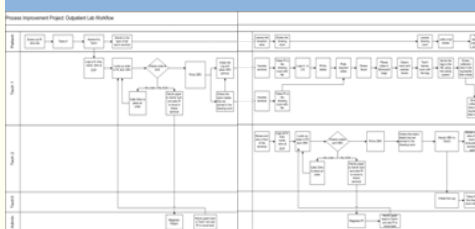
Spaghetti Diagram



Distance Traveled ~2005500 ft
 Distance Traveled ~699500 ft

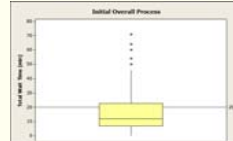
The Spaghetti Diagram shows travel time per year phlebotomists experience while providing services for our patients. This 1306000 feet travel time was eliminated by workflow standardization, redistribution of assignments and redesign of work flow. Decreasing the travel time increases employee and customer satisfaction and decreases non-value added time.

Swim Lane Process Map



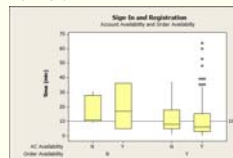
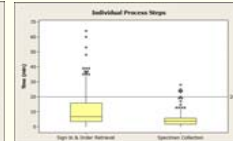
This map indicates phlebotomy process steps by role/responsibility. It was used to understand the initial flow of information and patient. It shows multiple hand-offs during the various processes and variation in processes.

Initial Overall Process



Initial Box plot identified problems with the sign-in and order retrieval. The initial Sign-in and order retrieval processes may need up to 17 min or more.

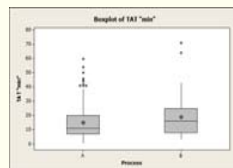
Individual Process Steps



Hypothesis:

Null: there is no difference in process time due to account or order availability

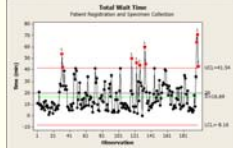
Alternate: there is a difference in process time due to account or order availability



Hypothesis:

Null: there is no difference in process time between phlebotomists (process A vs. B)

Alternate: there is a difference in process time between phlebotomists



Phlebotomy Process: Patient sign-in, patient registration, laboratory order retrieval or order entry, and specimen collection.

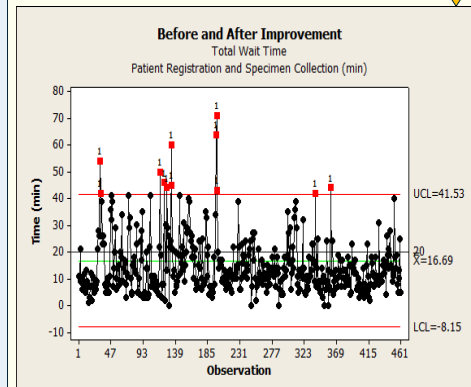
Initial Wait Time: 67.7% within 20 min
 Mean: 16.7 min
 SD: 8.28 min

OPC Phlebotomy Improvements

1. Move physical location of admissions representative to center of OPC phlebotomy desk for consistent central patient access.
2. Assign primary function of greeting and signing in patients to admissions representative.
3. Assign pre-checking account status for every patient at the point of sign-in to the admissions representative.
4. Add an additional responsibility of pre-checking lab order status in Powerchart for every patient at the point of sign-in to the admissions representative.

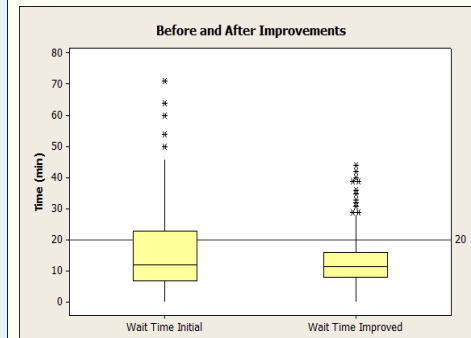
Improvements will target variances in patient wait times and allow lab phlebotomists to collect patient specimens quickly without a delay due to the workflow processes of the initial patient sign-in.

Results



Initial mean: 16.7min
 Initial Wait Time: 67.7% within 20 min
 New mean: 13.1min
 New Wait Time: 86.3%

For every 50 patients, saved 3 hours per day



Wait Time improved by 28 percent. Eighty-six percent of patients received phlebotomy services within 20 min.

Conclusions

Lean and six sigma methodology helped OPC to reduce wait time and improve patient care. Staff reports better organization and less stress. DMAIC used to improve the existing process and service:

- Define: 90% within 20 min
- Measure: Wait time and process time
- Analyze: Swim Lane, Box plot and I Chart
- Improve: Reduce waste and variation
- Control: Hold the gain

Acknowledgements

We would like to acknowledge those who helped to make this project a success: Admission Department and all specimen collection staff.

86.3% within 20 min