Lakeland Regional Medical Center's (LRMC) **LEAN Initiative: Our Laboratory's Journey** to Better Patient Care Through Automation

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ABSTRACT

BACKGROUND

Lakeland Regional Medical Center (LRMC), of Lakeland Regional Health System (LRHS), is the fifth largest hospital in Florida with 851 beds and approximately 160,000 ED visits (busiest ED in the state) in fiscal year 2012. LRHS Laboratory recognized the need for improved efficiency and culture change as a result of ongoing customer dissatisfaction, employee disengagement, and silos. LEAN and Six Sigma methodology identified current opportunities for improvement. The analysis led to a vision for creating a state of the art, fully automated laboratory in the existing footprint. The benefits led to standardization of methodology and reduction in turnaround times for both manual and automated analytes.

OBJECTIVES

- •Improve customer satisfaction
- •Decrease variability and turnaround times.
- •Improve staff productivity
- •Eliminate waste and non-value added activities in workflow processes

METHODOLOGY

A Laboratory Performance Improvement Team was assembled to evaluate our current process within the clinical laboratory. The team comprised of LEAN green/ yellow belt, supervisors, coordinators, frontline staff and a vendor. The members met weekly. The team found the following opportunities for improvement; non-value added activities, bottle necks and excessive variability in processes. We used tools such as process mapping, spaghetti diagrams and control charts.

INTRODUCTION

The Clinical Laboratory consisted of multiple work stations (Hematology, Coagulation/Urinalysis, Chemistry, Special Testing). The lab assistants manually received in the LIS, spun samples and delivered specimens to individual benches. The technical staff then loaded samples to the analyzers, reviewed every result from a print out and verified in LIS. Lack of standardized processes led to variation of received to resulted TAT times. It was recognized that there were many non-value activities in the current system leading to an inefficient environment. LEAN and Six Sigma methodology identified current opportunities for improvement. The laboratory was redesigned to improve efficiency, increase productivity and decrease manual processes with full automation and autovalidation, within twelve months.



