



KEY POINT SUMMARY

OBJECTIVES

The objective of this paper was to report on the outcomes following the implementation of lean management, Stanford Operating System (SOS), in the ED of a healthcare system.

Lean manufacturing improves emergency department throughput and patient satisfaction

Kane, M., Chui, K., Rimicci, J., Callagy, P., Hereford, J., Shen, S., ... & Pickham, D. 2015 | *The Journal of Nursing Administration*. Volume 45, Issue 9, Pages 429-434

Key Concepts/Context

The Emergency Department (ED) in the authors' organization was facing overcrowding, which was placing a strain on ED resources and resulting in a decrease in patient satisfaction. It was decided to extend to the ED the implementation of a lean management strategy, Stanford Operating System (SOS), already in use for hospital operations. This paper presents the results of the implementation of this strategy and its impact on throughput and patient satisfaction. The authors reveal that the implementation of their lean strategy in their organization's ED was instrumental in reducing patient length of stay and door-to-provider times and increasing patient satisfaction scores.

Methods

The authors outline the concept of SOS and its two components – the improvement and the management systems. Within the SOS Improvement system were three concepts they described - a focus on workplace organization (with an objective to reduce waste and optimize productivity by conforming to the 5S process – sort, simplify, sweep, standardize, and sustain), Kaizen event or rapid process improvement workshops (RPIWs) (where multidisciplinary teams analyze and improve common but complex processes), and value stream mapping (where the flow of people and products is mapped). They also elaborated on active daily management (ADM), a key part of the SOS management system. In all, the organization implemented two 5S measures, three RPIWs, the start of the ADM system, and they formed two programs to improve operational efficiencies.

Findings

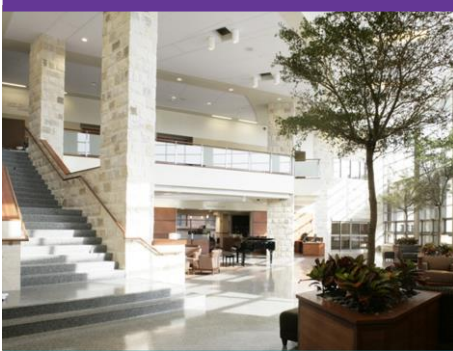
The following shows the efforts undertaken by the organization and results these steps yielded:



DESIGN IMPLICATIONS

An effective lean strategy identified in connection with design was relocating supplies from multiple points in the ED to one area and organizing them categorically for easy access. Another lean strategy identified was the fast track process. A board to track patients and enhance communication among team members was considered effective.

- The two 5S initiatives were carried out in the nurses' and physicians' work spaces and supply areas – this led to
 - Relocating supplies from multiple locations to one space
 - Arranging supplies by category and using color codes
- The first RPIW resulted in:
 - Identifying a role for overall management of flow in the ED – an existing nurse was reallocated this responsibility.
 - Color codes were created and introduced into the electronic medical records as a visual aid for inpatient admissions.
 - A track board was installed for the team members to help
 - Reduce delays
 - Improve communication
- The second RPIW led to:
 - Developing a roadmap according to a patient's needs – whether social services, guest services, transportation, etc. would be needed
 - The above would lead to a decreased length of stay plus provide the patient with information about the ED process.
- The third RPIW focused on triage:
 - A role for a greeting nurse was developed – she would conduct a short assessment to determine patient acuity during the greeting period and accordingly separate patients for immediate treatment and to the waiting area.
 - A patient access representative would perform a parallel process during the initial registration.
- Two new programs were developed to reduce waiting times and consequently patients who left-without-being-seen (LWBS):
 - Setting up of a fast track process to cater to low-acuity patients
 - Developing a team triage program – focus on timely treatment for patients with severe injuries or illnesses
 - The above two processes reduced the door-to-provider time by 36 minutes.
- The ADM system entailed



The Center for Health Design: Moving Healthcare Forward

The Center for Health Design advances best practices and empowers healthcare leaders with quality research that demonstrates the value of design to improve health outcomes, patient experience of care, and provider/staff satisfaction and performance.

Learn more at
www.healthdesign.org

- The involvement of nursing leadership and physicians in patient care through daily visits, supporting new processes, and active involvement in process improvements.
- Easy access to data on clinical metrics, performance data, etc.
- Daily huddles

The above strategies led to

- The median length of stay decreased by 17%.
- Reduction in door-to-provider time by 73%
- Number of patients who LWBS fell from 2% to 0.65%.
- Time from disposition to transfer for admission was reduced by 15%.
- Time from disposition to discharge was reduced by 13%.
- Patient satisfaction scores improved:
 - Likelihood to recommend: by 60 percentile points
 - Waiting time to see doctor: by 68 percentile points
 - Being informed about delays: by 53 percentile points
 - Likelihood to recommend by fast-track patients: at the 99th percentile

Limitations

This article pertains to the implementation a lean management strategy in an Emergency Department to address overcrowding.

The Knowledge Repository is provided with the funding support of:



Additional key point summaries provided by:



RESEARCH DESIGN
connections