

**Hospital Name:**  
Doctors Hospital

**Address:**  
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Columbus, OH 43213  
(614) 298-6695

**Contact:**  
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2006 ED Volume: 70,000  
Growth from 2005: 1.4%  
Total Staffed Hospital Beds: 250  
Acute ED Beds: unknown  
Fast Track: Yes  
Clinical Decision Unit: No

**Problem to be Resolved:**  
Not enough capacity to  
accommodate ED visits

**Key Words:**

- Left without being seen (LWBS)
- Average length of stay (ALOS)
- Patient satisfaction
- Lean manufacturing
- Software simulation

**Lessons Learned:**

One of the most important factors to success for Doctors Hospital was flexibility. Specifically, each treatment room must be fully equipped and each staff member fully capable of handling patients of any acuity, rather than trying to designate specific resources for urgent versus acute care needs.

**Reason for Change:**

Staff at Doctors Hospital felt completely overwhelmed by the volume of ED patients they saw each day. The ED, originally designed to accommodate 35,000 visits annually, was in fact seeing 69,000 patients each year. The ED could not accommodate all of these visits in a timely manner, which caused the LWBS rate to be high, at six percent, while patient and staff satisfaction were very low. Because plans for a new ED were still two years away, ED management realized that they needed to come up with process changes to improve patient flow through the facility.

**Implementation:**

To address these issues, an ED management team held meetings over the course of two months. At these meetings, they discussed the current situation, identified underlying causes to problems they were seeing, and looked for solutions from other industries that could be applied to patient flow.

Doctors Hospital's ED management chose to adopt a "lean manufacturing" technique, aimed at reducing unnecessary steps in the patient-care process. Specifically, the lean manufacturing concept was applied to reduce patient handoffs between staff members and expedite lab and radiology tests.

Most importantly, Doctors used software called "Arena" to simulate how various changes they could put in place would impact actual ED operations. This was beneficial as management could show staff members exactly what must be done to improve their situation, and they could test to see if changes were actually likely to work before implementing them.

**Results/Impact:**

Doctors Hospital was able to decrease LWBS rate from six percent to three percent and reduce ALOS from 220 minutes to 180 minutes. At the same time, ED volume continued to increase at an average rate of 20 patients per day. Prior to initiating changes in the ED, Doctors had Press Ganey patient satisfaction scores in the tenth percentile. Since then, however, Press Ganey scores have increased to the 70<sup>th</sup> percentile.