

Emergency Medicine Lean Systems Design

What is Lean Systems Design?

Lean Systems Design is an inexpensive and effective means of optimizing the combination of processes, resources and facilities used to deliver healthcare services in emergency medicine. This discipline is an outgrowth of the Toyota Production System, and has been used with great success in automotive, aerospace, consumer goods, and many service industries.

SERVICE BENEFITS

ED Lean System Design

- Increases Quality of Patient Care
- Provides Improved Patient Flow
- Reduces Overall Staff Utilization
- Increases Bed Availability
- Reduces Non-Value added Work for ED staff
- Reduce or Eliminate Ambulance Diversions
- Reduce or Eliminate Patient Boarding
- Increases ED and Hospital Net Revenue without adding Resources
- Provides Greater Patient "Face Time" with ED staff
- Makes EDIS work for you (not the other way around)
- Yields a Continuous Improvement Process for ED Personnel

How Does it Work?

Management engineers performing lean systems design in an emergency department focus on eliminating waste during all phases of patient diagnosis and treatment. This waste may include excessive wait times for patients and staff, motion of people and machines that do not directly contribute to the well being of the patient, and unbalanced workloads for physicians and nurses, just to name a few.

What's Involved in Doing a Lean System Design in an ED?

Lean Systems Design typically involves a study with three major components. The first is a current state analysis of existing operations, which serves as a baseline. The second element is a very specific set of recommendations based on detailed analyses of your ED. Finally, a future state analysis is performed to validate operations with all recommendations in place.

A study usually takes a total of twelve to fourteen weeks to complete, with approximately two weeks of onsite data collection and observation, followed by several follow up reviews and a final buyoff of the study. A separate implementation phase is usually performed after the study, by the management engineers and project managers who created it, with oversight provided by department staff and hospital administrators.

How Much Does it Cost?

A Lean Systems Design Study for a typical ED with a patient census of 61,000 cases annually, will range anywhere from \$40,000.00 to \$65,000 USD. The hospital payback rate in savings and/or additional revenue opportunity is usually in a range from 75 to 150 times the cost of the study.

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Can It Really Make a Difference?

Absolutely. Why do you think so many people in other industries are using it? That's because Lean works.

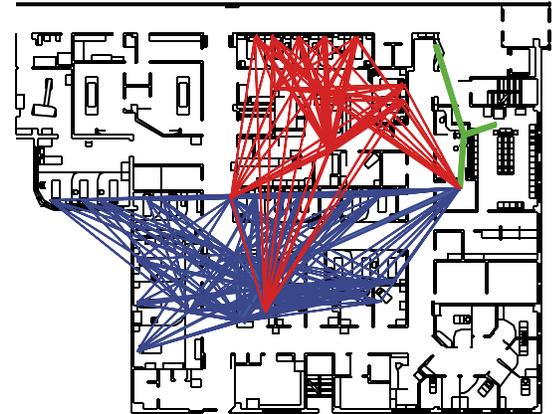
Just take a look at the figures at right. The top image was the current state workflow in the ED of a 325 bed regional hospital. The multi-color lines indicate staff walking all over the department to get work done.

Now compare that to the image below it, which was the future state condition for the same operation, with specific process and facilities recommendations identified. Work is more localized and the changes resulted in a savings of 3.0 hours per day of non-value added work for ED personnel. This is just one example of how lean effectively transforms work in emergency medicine.

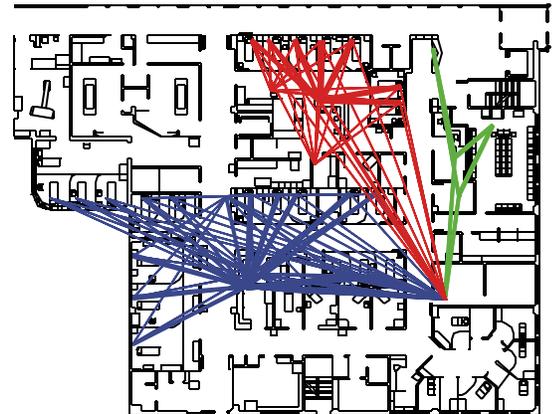
How Do I Go About Getting This Service?

If you're directly involved in managing your department, feel free to give us a call or send an e-mail. We would welcome the opportunity to discuss specifics on Lean Systems Design and how it may solve problems, lower the cost of services and increase the quality of patient care in your ED.

If you're not directly involved in managing your department, but believe that this may be of interest to those who do, then please forward this information accordingly. Certainly, both you and your patients will benefit.



Emergency Department
Current State



Emergency Department
Future State

For more information on how management engineering and lean systems design can make a big difference in your emergency department, please contact our sales department at Xigma Engineering Services, LLC, or e-mail us at sales@xigmaworks.com

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