

Improved Orthopedics X-ray Throughput and Flow

The Problem

X-ray in the Orthopedics Clinic was having difficulty accommodating their volume. Double and triple booking caused uneven flow and push on the system, creating waves of overcapacity which result in long waits in x-ray. In addition, patients were x-rayed using a “first in – first out” approach. This approach created a system in which patients were x-rayed independently of whether their provider was ready for the patient.

Aim/Goal

- Improve x-ray throughput and flow by leveling demand
- Reduce time physicians wait for patients needing x-ray by prioritizing patients differently

The Team

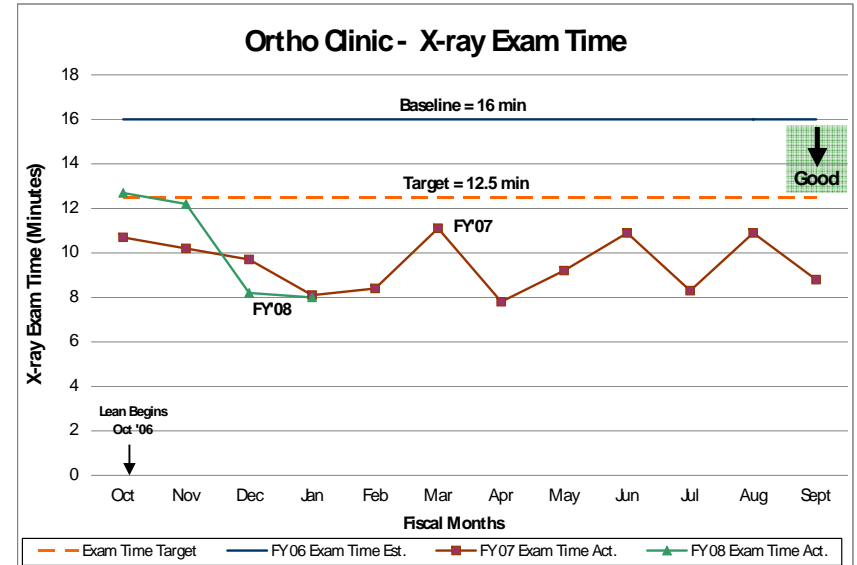
- Orthopedics Leadership
- Orthopedics Physicians
- Orthopedics Support Staff
- Diagnostic X-ray
- Lean Program Team

The Interventions

- Pull versus Push
 - Visual boards signal x-ray which physician is ready for a patient
 - Leveled volume of patients going from x-ray to the physicians
- Reduce Waste
 - X-ray gets signal directly vs. Medical Assistant getting patient for x-ray
- Staggered start times and lunch times for providers to eliminate large peaks in volume

The Results

- Overall patient visit time reduced from an average of over 3 hours to 57 minutes!
- Leveling demand resulted in reduced “down time” for providers waiting for patients in x-ray.
- Eliminated need for 4th x-ray machine, saving \$452,000



Metrics	Baseline (Oct '06)	Target	Results (YTD)
X-ray Exam Time	16 min	12.5 min	9.7 min

Lessons Learned

- X-ray's success was measured on how fast they could x-ray a patient once they were checked-in, rather than x-raying the right patient, at the time they were needed (push vs pull)
- To get throughput in the clinic, clear communication was needed between x-ray and the clinic
- By addressing waste in the x-ray exam process, x-ray exam time improved significantly
- Because of the improved exam time, it eliminated the need for the 4th x-ray machine

Next Steps/What Should Happen Next:

- Continue to monitor any issues hourly on the production control board
- Continue to monitor total visit time and respond to increases
- Continuously improve using data