

Case Study: A Large Hospital's Emergency Department Identified Over \$2.4M in Revenue

I. Description

Senior management at one of the busiest Emergency Departments in Chicago was committed to expanding operations in a new building and redesigning internal patient processing. There was a recognized need to reduce operating costs, improve staff productivity and increase revenue. There was a corresponding need to improve patient service and reduce wait time. Senior managers also wanted the ED to be designed to support operations during mass casualty disasters.

II. Key Findings

After the completion of the assessment phase, there were significant discoveries made which contributed to the high operating costs, poor operating performance, lost revenue, and missed opportunities for business expansion:

- There was limited understanding of changes in the area population and the impact these demographic changes will have on future patient volume in the ED.
- The market share of acute heart attack patients was declining.
- Senior management had poor visibility of day-to-day operations in the ED.
- Within a particular patient group, there was significant variation in ancillary service utilization and processing time requirements between attending physicians.
- Turn-around time for laboratory tests and radiology procedures increased dramatically at certain times of the day.
- The number of exam rooms and the number of trauma rooms were insufficient. These room constraints caused increased patient processing time and excessive wait time.
- The staffing levels for attending physicians, nurses and medical technicians were not well balanced with patient workload.
- Significant opportunities were identified to increase revenue through improved recording of ancillary service testing, physician reading and interpretation of these tests.

III. Methodology and the Road to Recovery

- A zip code level population and market analysis was completed to identify growth opportunities and forecast demand.
- Several discrete event simulation models were developed to address facility size, staffing and contingency operations.
- A space plan was created for the new ED. This document contained a detailed listing of trauma, exam and all other spaced needed to meet the demand forecast.
- Services for heart attack patients were expanded in a new chest pain center.

- Individual physician reports were prepared to identify patient type specific performance goals for ancillary service use, processing time, billing and documentation.
- A practice pattern working group was established to define standard practices, reduce variation and improve processing time.
- Revised core staffing plans for physicians, nurses, technicians and ancillary service personnel were created to better match staffing levels to patient census.
- Revised physician documentation in EMR system to capture previously unbilled charges.

IV. Results Achieved

- Near-term operational improvements reduced patient processing and wait time and for higher patient volume in the facility constrained building.
- Space planning work was used to justify Certificate of Need documentation for state approval of the building expansion project.
- Contingency planning results used to justify and obtain Federal and State funds for building renovation and new construction.
- Improved patient documentation and increased billing of \$2.4 million during the year following implementation.

**Specific project results are proprietary. For more information regarding this case study or to request an introductory meeting, email us at info@tefen.com.*