

MANAGING GROWTH: IMPROVING THROUGHPUT USING PROCESS REDESIGN

Introduction: Sun Health Del E. Webb Hospital has experienced growth rates of greater than 20% per year since 2001. In 2002, Sun Health Del E. Webb Emergency Department had a volume of slightly over 19,000 visits annually. By 2004 the volume had grown to over 36,000 visits and by the first half of 2005, the projected annual volume was up to 46,000 visits. Patients Left Without Being Seen (LWBS) climbed to a high of 14% in April 2005, and Length of Stay (LOS) for treated and released patients soared to almost 6 hours. Wait times to treatment were typically 6-8 hours in length, with peak wait times greater than 10 hours.

It was clear that the Emergency Department (E.D.) throughput processes in place were insufficient to handle higher volumes. The Administration Team at Sun Health Del E. Webb engaged Insight Strategies, a consulting firm specializing in rapid cycle improvement in healthcare based on Daimler-Chrysler methodology, to assist the team in “reengineering” the patient flow process in the E.D.

Hypothesis: If the group identified the essential provider functions needed upon patient presentation to the E.D. at Sun Health Del E. Webb, and redesigned a new process around this identifiable need, then both LOS and LWBS would decrease. Sun Health Del E. Webb E.D. would be able to handle increased volumes through improved efficiency, and patient satisfaction would increase.

Methods: In October 2005, using Simulation Analysis of the E.D.’s existing flow process, the group was clearly able to see the effect that early queuing up of patients in triage and variability of arrival times had on throughput. It became clear that using the current methodology patients would consistently queue to overcrowding by 1000, and E.D. saturation would continue until 0300 or 0400. It was evident that triage time, registration time, and wait times constituted the majority of the E.D. visit, ultimately causing significant delays in treatment.

The reengineering group was made up of a multidisciplinary team representing the majority of the key departments that affect throughput in the E.D. The members of each of these departments were employees who perform direct patient care or worked directly with the current process. There was a strong commitment from administration that any changes the group came up with would be fully supported as long as the vision was focused on the patient experience. Using the Daimler-Chrysler vernacular, the group was charged with “building a new car,” not an “oil change.”

Results: Working under the assumption that the primary reason patients come to the E.D. is to see a physician, the group’s aim was to expedite that process. A redesign was performed in which the traditional comprehensive nursing triage assessment is replaced

by a brief evaluation by a “Quick-Look Tech.” The patient is then brought to a treatment area, where an immediate assessment can be performed by the physician and nurse simultaneously. In addition, patients are no longer assigned to permanent beds. Different patient care functions, from physical exam to data collection and procedures may be performed in various parts of the E.D., thus maximizing the efficient use of limited space.

In six months, LOS has decreased from 5:____ to 3:13. In June 2006, LWBS were .001% (10 patients out of 3200 visits), down from a high of 14%. The Sun Health Del E. Webb has continued to handle a 12% growth in volume from 2005 to June 2006. Patient Satisfaction scores using the Press Ganey survey have climbed from 9% to 85% in the six months since the redesign.

Conclusion: By focusing on customer needs, E.D. throughput was reengineered by a collaborative process involving actual hospital staff, and resulted in best practice based on the data following the redesign.