



Case Study:

Rapid Improvement Event Transforms Emergency Department Flow

Hospital Information

**Tennova Healthcare – Cleveland
Cleveland, Tennessee**

- 48,000 annual ED visits

TeamHealth Services

**Emergency Medicine
Hospital Medicine**

Results

- Reduced LWOT from 4.2% to 1.3%
- Decreased door-to-provider time by 62%
- Improved LOS for discharged patients by 26%
- Improvements to patient flow allows ED to treat 12 more patients/day, generating \$2M in annual revenue for the hospital



TeamHealth delivered the expert support we needed to quickly transform our emergency department performance and help our team maintain dramatic improvements over the long term.

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TEAMHealth

Challenge

Tennova Healthcare – Cleveland is an acute care hospital located in a highly competitive market north of Chattanooga, Tennessee. The emergency department, which treats approximately 48,000 patients each year, was dealing with patient flow issues that resulted in a high rate of patients leaving without treatment (as high as 7% some months), long wait times, poor patient satisfaction and a negative perception in the community.

Solution

In partnership with hospital leadership, Tennova Healthcare – Cleveland's emergency medicine partner, TeamHealth, organized and executed a three-day improvement event that helped transform the department's patient flow model and created rapid, measurable and sustainable improvements.

Engaging physician and nursing leadership, TeamHealth designed a new, three-tiered flow model using a rapid triage process sending patients to one of three areas based on their level of acuity:

- Low acuity "super track" for ESI 4s and 5s to assess, treat and discharge these patients within 60 minutes
- Mid-acuity area for ESI vertical 3s and some horizontal 3s, with a LOS goal of less than 150 minutes
- A high-acuity zone for ESI 1s, 2s and some horizontal 3s

In addition, TeamHealth evaluated daily staffing levels against patient demand to better match physician and nurse availability with patient volumes and to enhance patient flow. TeamHealth also instituted "disposition huddles" to hardwire the new flow processes and increase the sustainability of these improvements over time. In these huddles, which take place every two hours, physician and nurse leaders review all patients in their respective zones to identify barriers that can be removed in order to expedite patients to discharge or admission.

Results

As a result of the changes implemented following the three-day event, the ED is dramatically more efficient. With a baseline LOS for discharged patients of 270 minutes and a goal of 180 minutes, the team achieved an average LOS of 147 minutes on its trial day. Similarly, with average LWOT of 4.2% and a goal of 2%, the hospital had a rate of less than 1% on the trial day.

On the basis of these early results, the ED team stuck with the new flow model and sustained its performance over time. Nine months after the improvement event, the hospital's LWOT rate remained below the target at just 1.3% of patients. Door-to-provider times dropped by 62% (from 35 minutes to 12 minutes) and LOS for discharged patients decreased further to 132 minutes.

Combined, these improvements allowed the ED to treat an additional 12 patients per day, equating to an approximately \$2 million increase in annual revenue for the hospital.