ED MD FIRST CLINICAL REDESIGN
GLENWOOD HOSPITAL

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Summary:

Applying the scientific method and problem solving tools to improve patient safety and quality.

Hospital: Glenwood Memorial Hospital
Location: Chattanooga, Tennessee
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Category:

- B: Bed Placement
- C: Clinician Initial Evaluation &Throughput

Key Words:

- Patient Safety
- Left Prior to Medical Screening Exam
- Patient Satisfaction
- Staff a
- Physician Satisfaction
- Clinical Delivery Redesign

Hospital Metrics:

- Annual ED Volume: 48,000
- Hospital Beds: 336
- Ownership: Non-profit
- Trauma Level: N/A
- Teaching Status: No

Tools Provided:

- A3 Performance Improvement Documentation
- ED D2D Team Charter

Clinical Areas Affected:

- Emergency Services
- ED Providers
- ED Charge Nurses
- ED Staff
- Triage Functions

Staff Involved:

- Hospital Administrators
- ED Physicians and Extenders (NP/PA)
- ED clinical support staff
- Registered Nurses
- Internal consulting services

Innovation

The methods used to improve Emergency Department patient safety and increase quality are to apply the scientific method in redesigning clinical processes while creating patient-centered innovations. It is in the use of applying scientific methods while pursuing the ideal state which are to be considered as innovative Emergency Department performance improvement practices.

The problems in this Emergency Department are that patients waited on average 69 minutes (up to greater than 4 hours) to see a physician and consistently experienced a Left without Treatment Rate of greater than 4% of total patient visits. The ED's front end processes created delays in essential and life saving treatments which resulted in significant patient safety occurrences. These problems were a result of their split flow model, which was designed for lower acuity patients (ESI IVs & Vs) to be treated by physician extenders and higher acuity patients (ESI Is, IIs, & IIIs) to be treated by ED physicians. This ED's clinical design and patient flow processes created significant delays in treatment for their higher acuity patients due to the lack of available space in the Main ED for the physicians to see more patients.

Ideally, what the Team is trying to accomplish is implementing innovative ED MD First principles as a set of process improvements and leadership strategies that reduce patient's risks by eliminating the non-value added activities between patient's initial encounter and the physician's exam. This ideal state is achieved by continuously eliminating wastes and standardizing work which create better processes for patients, providers, and staff. The ideal state of the ED MD First clinical design is achieved by eliminating all wastes and non-value added activities between the patient and the ED provider. The ED MD First clinical design eliminates the need for lengthy triage assessments, nurse-driven treatment protocols, and reduces physician and staff overall workload burden.

The idealized design of ED MD First was created by the ED Process Improvement Team after extensive patient-level data analysis and direct observations of clinical processes. During our direct observations the empirical data demonstrated significant underutilization of physician extenders in the Fast Track area and extended lengths of stay for patients with higher, more complex presenting complaints. The ED MD First design was created as a clinical redesign model for reducing the amount of time patients wait to be seen by a provider and improving utilization of physician extenders by maximizing their responsibilities in treating higher acuity patients who are more than likely going to be discharged to home.

Results (DATA GRAPHS)

Overall, there have been material improvements in Length of Stay (Admissions and Discharges), Door to Doc (D2D) Times, and Left without Being Seen (LWBS) rates. The current data demonstrates improvements in all three metrics within three clinical performance domains: decreased time patient's spend waiting for services or information, reduced variation in staff and provider's practices, and standardization of clinical delivery processes. The data demonstrates a strong correlation (0.9) between LWBS% and D2D performance domains.

There have been multiple interventions created by Team members to eliminate wastes, add value, and standardize processes. As a result the ED has been able to do their work with fewer workarounds, quicker responses to patient's needs, and with markedly improved safety. While pursuing the ideal state (ED MD First) there has been even greater clarity by the front line staff in defining the expected condition(s) ahead of time which has made it easier to detect abnormal conditions while they are doing their work.

Timeline (See Team D2D Charter)

The Emergency Department improvements were completed over an intensive 12 week period. During this time there was extensive training provided to Team members in Lean Principles, Four Rules in Use, Four Design Principles, Standard Work, Visual Management, Clinical Redesign Methods, and the iterative application of A3 problem–solving strategies. The Team created a Team Charter to help guide work and define improvement goals.

The biggest challenge has been overall physician adoption of piloting innovative clinical redesigns. Overall, the staff has

been very receptive to adopting new ideas, thinking strategically about how to improve the patient's experiences, application of Job Instruction Training to new standard work, and identifying abnormal conditions compared to what was expected. The Team Leader has been coaching staff as the work is occurring and evaluating outcomes with each iterative improvement pilot. During each pilot there have been no patients who have left without being seen and consistent improvement in D2D times of less than 30 minutes.

Innovation Implementation (See A3 Documentation)

The Team's ED MD First model as an Ideal State is currently being pursued by their continued application of applying the scientific method, is eliminating more wastes, and A3 problem–solving with innovative clinical redesigns. The improvement strategy is to pursue the ideal state by starting slow and progressing to more speed with greater clarity to clinical redesign innovations. The method of identifying the ideal state was to specify in even greater details what was intended to occur and, most importantly, when a problem was identified the staff offered a real-time intervention rather than a "work around" to the problem.

The first improvement the ED Team implemented was to design a specific pathway for patients presenting with higher complexities who were more than likely going to be discharged to home. These specific patient types were to be seen by an ED physician. This improved systemic understanding was essential in creating a patient-specific pathway between those who are more than likely going to be discharged to home from those who are more than likely going to be admitted to the Hospital. Initially, the Team utilized ESI scores in determining patient-specific pathways, however it was quickly discovered these nursing severity scores didn't allow for greater flexibilities in determining which patients should be treated by either an MD or physician extender.

The initial clinical design was to have an ED MD treat specific patient types who presented with complex medical problems and were more than likely going to be discharged to home. However, this design created a more intense workload for their partnering physician and the Team needed to rethink their initial assumptions. The Team quickly redesigned pathways and used the same patient criteria with the physician extender treating these greater complexities.

The current design innovation is for those patients with complex medical complaints and are more than likely going to be discharged to home (w/o symptoms of acute chest pain or recent history of loss of consciousness) to be treated by a physician extender. With this new understanding the Team created improved handoffs and connections between the ED MD and physician extender. Previously, the ED MD would learn from the physician extender about the patient's case and intended plan of care near the time of the patient's discharge. With these higher patient complexities being treated by a physician extender there was an immediate need to improve feedback loops for concurrent shared understanding with the ED MD of patient's needs and plans of care.

This innovation has demonstrated a better balance between physicians and physician extenders workloads. In order to sustain D2D times there has also been a significant need to create innovative solutions in creating continuous patient flow processes. The Team is currently designing "Waiting for Results" patient pathways, connections, and staff responsibilities. The waiting for results process is a condition where there are always beds available for the next patient waiting to be seen by a provider. This patient centered innovation has been the most difficult to standardize with staff. There have been many iterations attempting to standardize waiting for results processes and the Team continues to ask critically important questions such as who should determine when a single patient is OK for Waiting for Results, what criteria should patient's meet in order to determine their movement to this space, is there a need for continuous nursing assessments, and how do we ensure the patients wait for their results?

Cost/Benefit Analysis

The cost is budget neutral with labor and supplies. There are administrative costs for the non-productive time spent by team members. There may be labor productivity savings (decreased nursing hours and/or increased patient visits) however it is too early to assess the overall impacts from these innovations. The productivity goal is to increase patient visits from 128 patients per day to greater than 140 patients per day (average) with current nurse staffing plans.

Advice and Lessons Learned

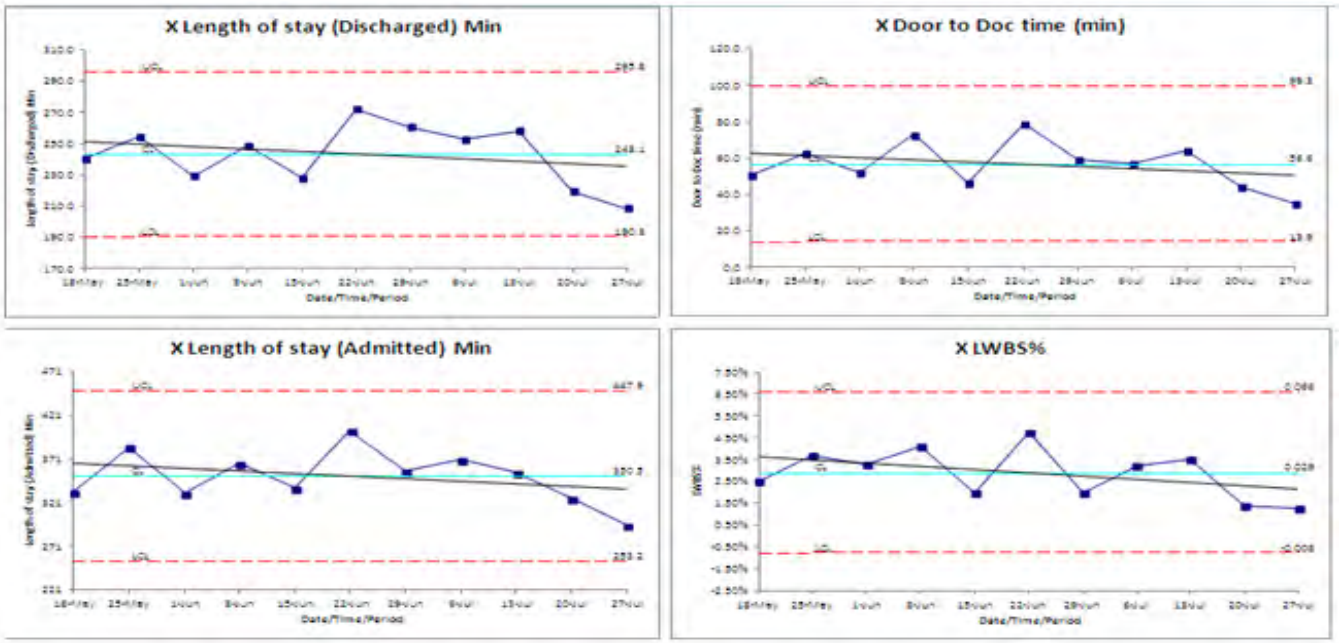
1. Start with a clear and concise Team Charter
2. Select Team members who are eager to solve patient process problems
3. Aligning D2D and LWOT goals to patient safety and quality are essential for gaining local buy-in
4. Nursing and physician leadership are critical for staff engagement and achieving improvements
5. Utilizing clinical redesign strategies can create improved patient processes and outcomes
6. Frequently communicate improvement D2D goals to staff and patients
7. A3 Problem Solving is a useful tool for applying the scientific method to process improvements
8. Leadership Standard Work and Job Instruction Training are essential learning needs for clinical improvement teams

Sustainability

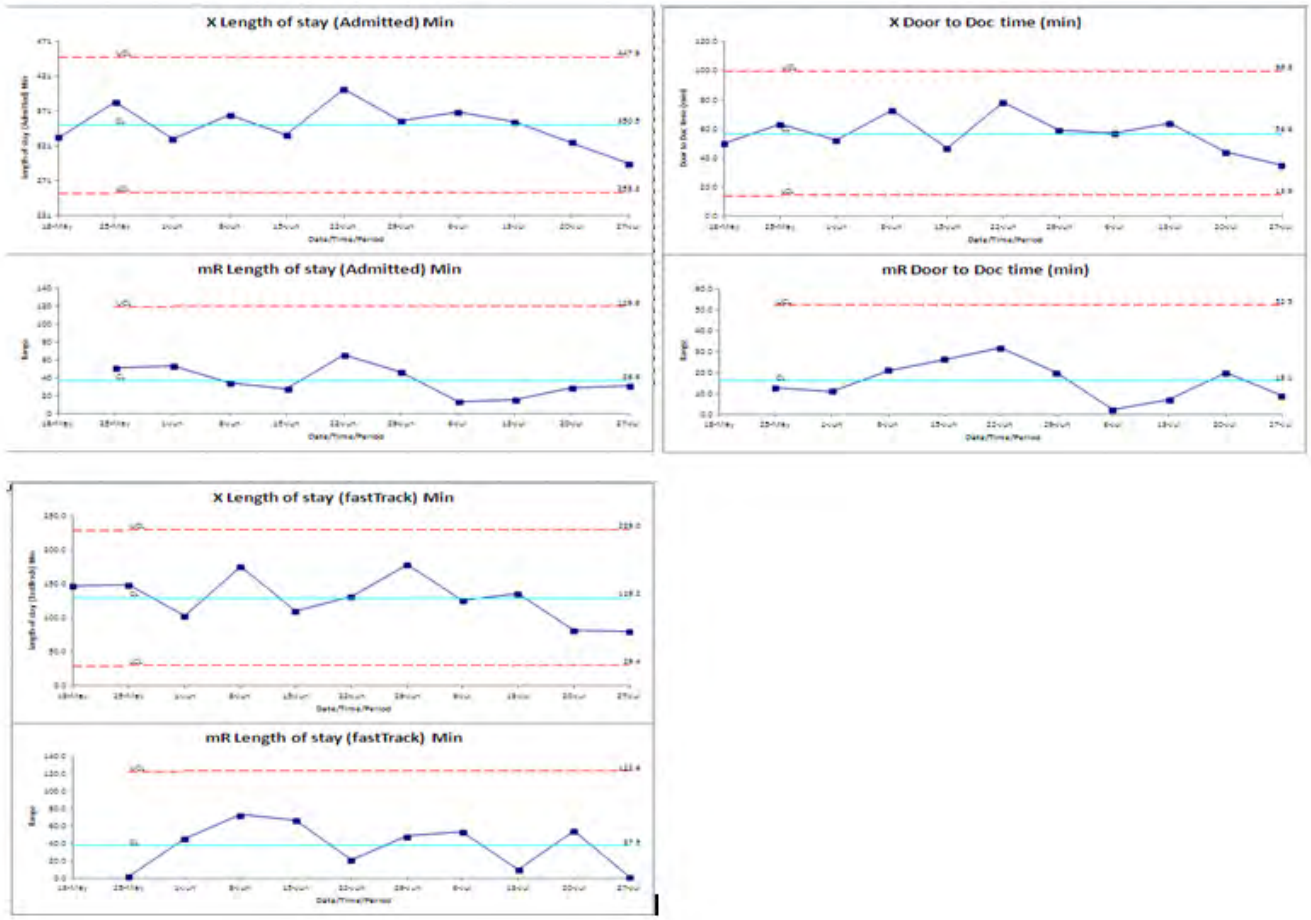
Initially, internal consulting resources were used for project management, coaching in problem-solving tools, and the application of clinical redesign principles. Implementing visual management and standard work tools will be primary problem solving methods used for sustaining results.

The secondary problem-solving tools to be used for sustaining improvements are implementing Leadership Standard Work methods, A3 Problem-Solving tools, and coaching to job instruction training. The Team Leader and members have a deep understanding of performance improvement tools for continued pursuit of discovering more innovations while pursuing their ideal condition(s). The Team Leader is implementing strategies where improvements will be continued by specifying ahead of time what the front-line staff are going to do, observing problems as they occur, and treating them in real time – the continued use of these strategies will generate ever greater improvements and move the ED closer to their ideal state.

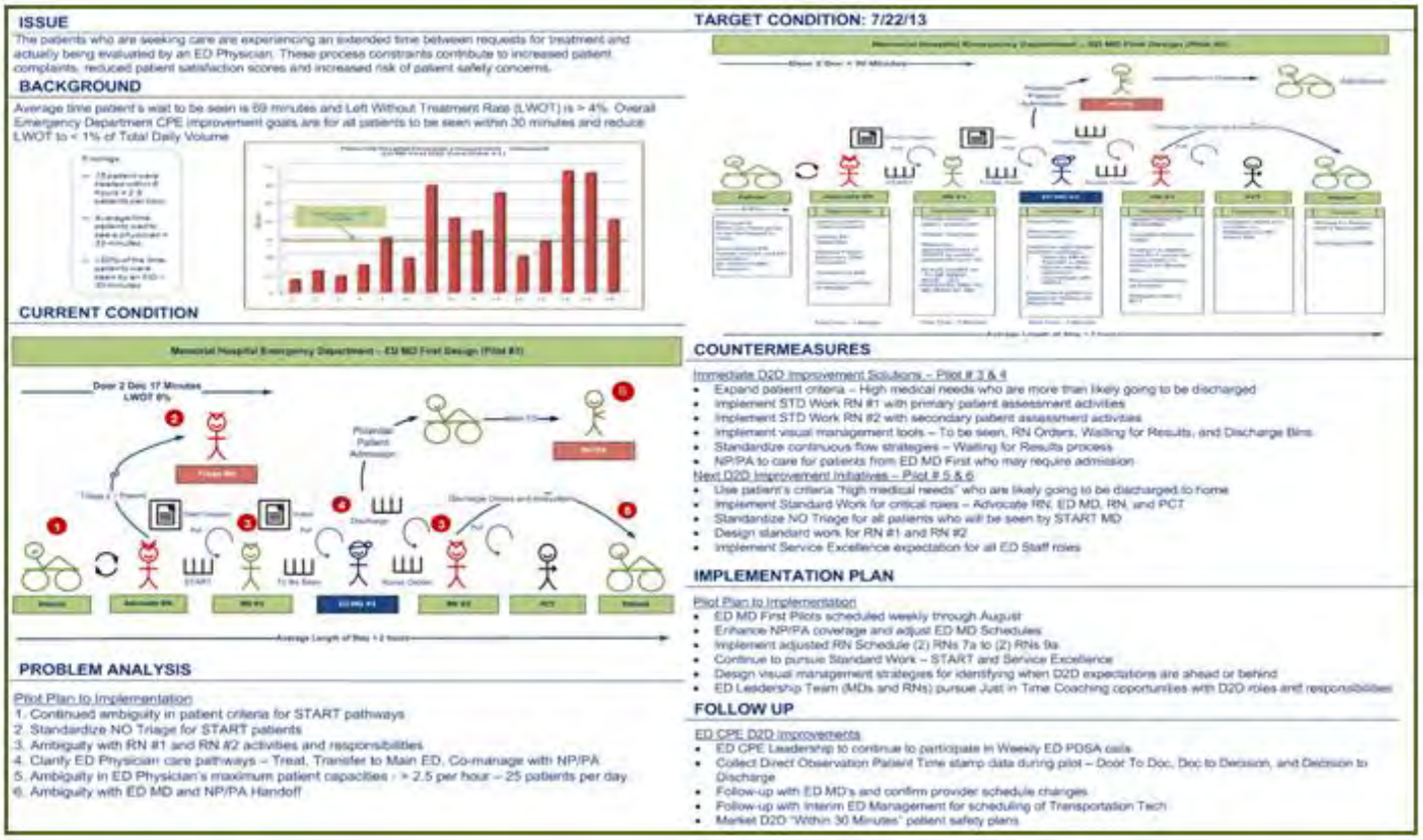
Overall Data Analysis (Key Performance Metrics) – Emergency Department ED MD First Results



Overall Data Analysis (Variation): Emergency Department ED MD First Results



A3 Problem: Solving Methodology



Emergency Department Team Charter

Memorial Hospital Glenwood – ED D2D Charter

Aim Statement: Eliminate the risk of serious patient events (safety) and increase patient throughput (growth).

- Improve patient satisfaction and reduce complaints
- Reduce patient wait times from "Door to Initial Evaluation" from 69 minutes to < 30 min.
- Improve Left without Treatment from 4% to <1% of total daily volume
- Eliminate waste(s) and non-value added activities (NVA)

Team Members:

Core Team:

Support Team:

CHI Support:

Context on Event design:

- Eliminate patient safety issues related to time patients wait to be evaluated by an ED MD
- Improve patient satisfaction scores
- Increase patient throughput and revenue

Stakeholders:

- ED Patients
- Emergency Department Staff
- Provider (MD/Extenders)

Criteria for Success: (Overall Impact)

- **Improved outcomes with patients who are waiting to be seen**
- Improved patient satisfaction score ratings (TBD)
- **Reduce the total time patients wait for their initial evaluation (MSE) to less than 30 minutes**
- **Achieve LWOT of <1% of daily volume**
- Eliminate waste(s) observed, increase value as experienced by the patient, and coach to real-time problem-solving

Scope of Solution:

- **The focus of our process improvement(s) will be on the roles, activities, and handoffs that occur between the time a patient registers and the time patients receive their initial evaluation (MSE).**
- The scope of this work will be redesigning the processes that occur for patients who are seeking treatment in the ED and eliminating waste(s) and NVA activities

Barriers to impact:

Sustaining gains and managing to clinical redesign, maintaining improved visual management and standard work, holding staff accountable, responsible for improvements created by the Rapid Improvement Team, and evolving ED Leadership Team

URGENT Matters