

1. Cover Page containing the following information:

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*SGV: ED improvements through Fast Track utilizing Lean (look back on SGV Lean charter)/Improving ER Throughput with a focus on patient disposition/admission

“Lean Implementation: Emergency Department Improvements Within Fast Track”

- Identify topical area(s) of focus in this application: - **patient safety - quality improvement - patient experience**

At AHMC Healthcare Inc. (AHMC), we serve the greater Los Angeles and Orange County regions through seven of our community hospitals. We will further exhibit one of our hospitals, San Gabriel Valley Medical Center's (SGVMC), successful journey in quality improvement within the Emergency Department (ED). Prior to our quality improvement efforts in the SGVMC ED and the application of LEAN in our operation, we had an average ED Length of Stay (LOS) of 270 minutes. Longer wait times led to overcrowding in the ED, which affected our discharge process and the inability of having available beds, and raised concerns with patient safety and patient experience. We identified an opportunity with our quality and patient experience through improvement of ED LOS throughput.

According to SGVMC's ED census, 70% of the population was diagnosed with low emergency acuity levels. These patients were placed under the care of SGVMC's ED Fast Track, which largely

affected the majority of SGVMC's LOS minutes. Once patients were in Fast Track, undefined roles, lack of operating procedures, poor coordination of care, and limited physical layout space resulted in throughput delays, increased ancillary turnaround time, and decreased patient satisfaction. By improving ED Fast Track LOS, our objective was to improve the ED's overall LOS. This proposed initiative positively impacted patient experience since patients were seen by physicians in a timely manner, and eliminated dissatisfied patients who no longer had to continuously wait to be seen. As a result, within the year of 2016, SGVMC successfully reduced their length of stay minutes by 20% to an average of 167 minutes (May 2016).

2. Executive Summary (limit 200 words)

The Affordable Care Act (ACA) in 2014 has greatly overburdened community hospitals due to the sudden increase of patients with facilities not suited to treat a high census load. Studies have shown ED overcrowding has been linked to escalating death rates, and the priority of quality and patient safety has been seen as the best approach on solving this crisis. Overcrowding in the ED leads to longer length of stay (LOS) minutes per patient's arrival. Longer LOS may largely indicate subpar ED hospitality and services due to overworked ED staff, poor ED layout and environment, and inadequate clinical care. San Gabriel Valley Medical Center (SGVMC), a community hospital in Southern California, encountered the ACA's impact with 25,662 patients in 2014 to an increased 28,290 patients in 2015 in their ED. SGVMC's ED Fast Track (FT) LOS was topping 168 minutes by September 2015. SGVMC adopted the LEAN Methodology with the initiative of improving patient safety and experience through leadership and collaborative efforts from their front line staff. Due to the evidence-based data of long FT LOS, SGVMC's LEAN team focused on tackling their ED's FT as the most effective way to improve their overall ED LOS times. In June 2016, SGVMC accumulated a FT LOS average of 87 minutes with approximately a 50% overall reduction. SGVMC's ED success demonstrated the strong potential of replicating their efforts of improving patient experience and quality measures to other departments and community hospitals.

3. Background and relevance of the problem being addressed and effort undertaken

Emergency Department (ED) overcrowding is a major challenge across the nation. While overcrowding is commonly characterized by wait times, evidence suggests a strong correlation with compromised quality of care, patient safety, and patient experience. Moreover, wait times often result in patients leaving ED prior to provider examination, or formally known as Left Without Being Seen (LWBS). LWBS represents not only failures for EDs to provide care to patients, but also patient safety concerns as patients' conditions may worsen without medical attention. These adverse outcomes could potentially be mitigated if providers are able to treat and place patients into the appropriate level of care in a timely matter.

The Affordable Care Act (ACA) further strained the overburdened emergency care system with the expanded access of healthcare coverage. Many newly insured individuals began utilizing EDs as a major source of healthcare. AHMC San Gabriel Valley Medical Center, a community hospital in the Los Angeles Region, experienced a 10% increase in their ED visits from 2014 to 2015, a surge that exceeded the statewide increase of 6.96% (Figure 1). SGVMC operated at a record high inpatient census, which left many admitted ED patients waiting for bed availability. On average, discharged and admitted patients spent more than two hours in the ED, and less than 50% of the patients were satisfied with their experience. This became the most apparent opportunity for SGVMC as part of their quality improvement initiative.

Figure 1. 2014 and 2015 Statewide Census and SGVMC census and wait times

Year	SGVMC Census	Statewide Census	SGVMC Patient Satisfaction
2014	25,662	11,562,550	48.03%
2015	28,290	12,367,716	49.42%

For healthcare services, LEAN methodology, formally from LEAN Six Sigma, heavily emphasizes on the technique of identifying the value of services from the patient's perspective. Through the application of LEAN methodology, each step in a process is carefully examined to identify and eliminate waste with time, staff, and supplies. It is a continuous effort to optimize efficiency and leaving only value-adding activities that meet the patient's expectations. In contrary to the traditional top-down change model, changes in LEAN are implemented and sustained jointly by the support of leadership and in collaboration with the frontline staff.

In September 2015, SGVMC launched the ED initiative to improve patient experience and ED throughput time, with Fast Track (FT) as the primary focus. Through LEAN, a multidisciplinary team examined the FT process and identified opportunities for improvement. FT is an evidence-based strategy designed to rapidly treat and discharge low acuity patients to allow the main ED to focus its resources on treating severe patients. During the LEAN process, data displayed an increase in census was mostly due to patients with low acuity that were more suitable under FT care. However, many of these patients experienced slow services in FT due to poor coordination and lack of standardized procedures. In this

application, we would like to describe the efforts and achievements accomplished by the process improvement team to improve quality of care and patient experience.

4. Describe the effort, including the scope, process, strategies and tactics utilized, challenges encountered and how they were addressed

The scope of SGVMC LEAN effort focused on patients admitted into the ER FT- specifically diagnosed as low acuity, with EMERGENCY SEVERITY INDEX (ESI) levels 4 and 5. In order to strongly execute LEAN, SGVMC strongly depended on the engagement from all staff, starting from the CEO to the front line staff.

Safety was a top concern when implementing standardized operating procedures, which led to a standardization of clinical process, and assembling smarter space for the fast track.

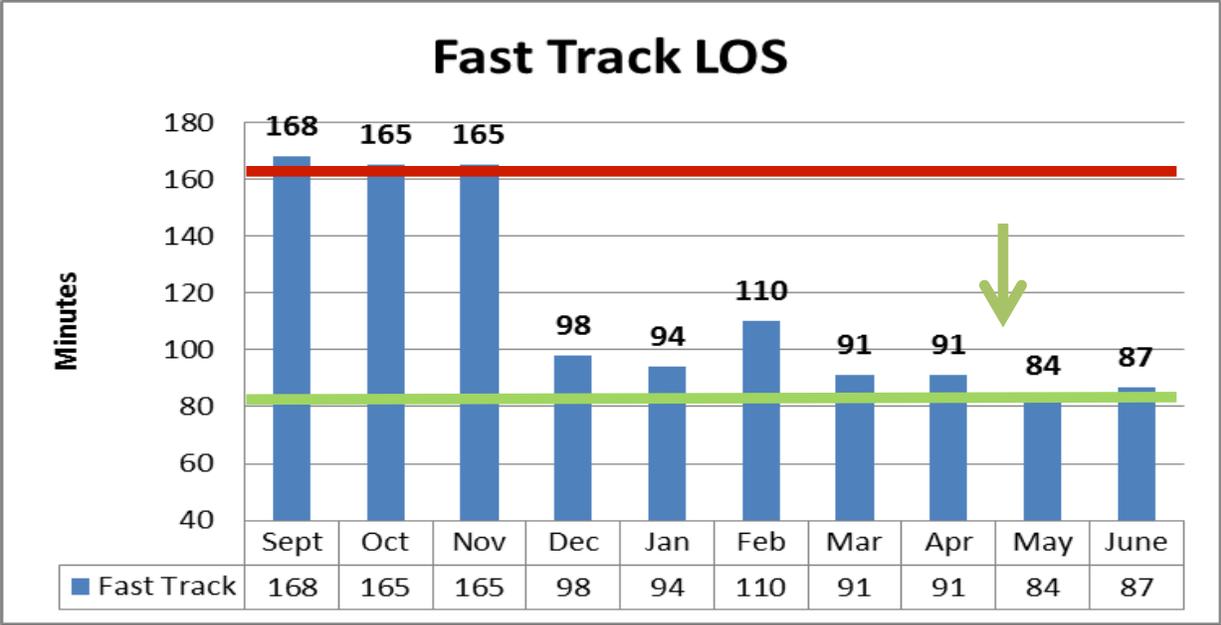
Strategies and tactics utilized during the LEAN event included several analytical and process oriented tools. The value stream map is a LEAN technique used to document, analyze, and improve the flow of information or materials required. It was used to visualize the FT process in its current state, identify the bottlenecks, and fix the factors that caused them. All LEAN team members provided achievable solutions, which were then ranked on a sliding metric of how easy or hard it is to accomplish. SGVMC LEAN members determined final solutions for the FT based on its achievability and effectiveness, and most importantly if it helped improve ED LOS' time measurements.

SGMVC encountered challenges which included staffing issues, and the commitment and teamwork to permanently maintain SGVMC's LEAN efforts. Staffing issues were resolved by rearranging shift coverage based on high patient volume and peak times. Failure of collaborative teamwork ensued due to complaints about suggested ED changes from LEAN team suggestions. These challenges were best addressed through communication from the ED Director and front line clinical nurses involved in SGVMC's LEAN team. The team invited authoritative interdisciplinary clinicians who voiced concerns on the LEAN initiative to LEAN meetings in order to further understand the evidence-based data and goals the hospital needed to address.

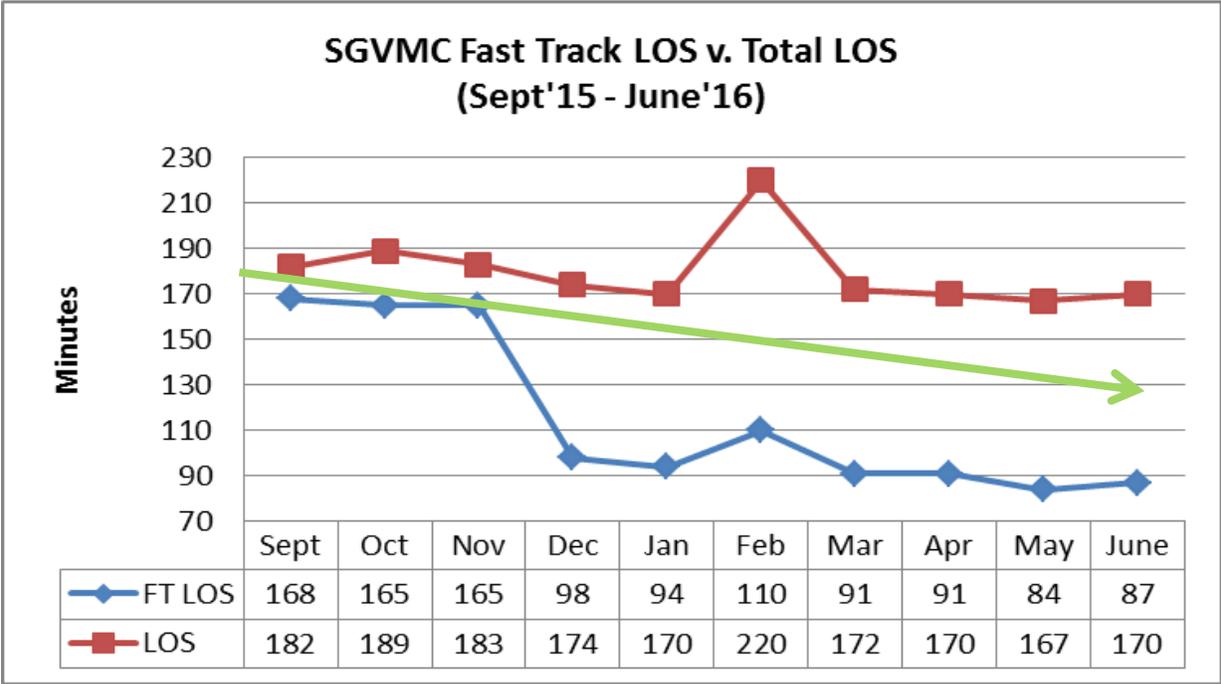
With an increase of patient census and limited bed capacity, wait times increased and patient satisfaction declined. The option of hospital reconstruction was not a viable solution as the project was to remain budget neutral. The LEAN team studied the current floor plan to identify layout changes that could potentially improve process and quality. SGVMC's ED FT originally had two FT rooms with one gurney, and no assigned area for the provider to chart. In conclusion, the team decided to split the FT rooms by removing the gurneys and adding two recliners and a curtain for privacy. A storage room to the side of the FT was transformed into a treatment room.

5. Describe the results of the effort

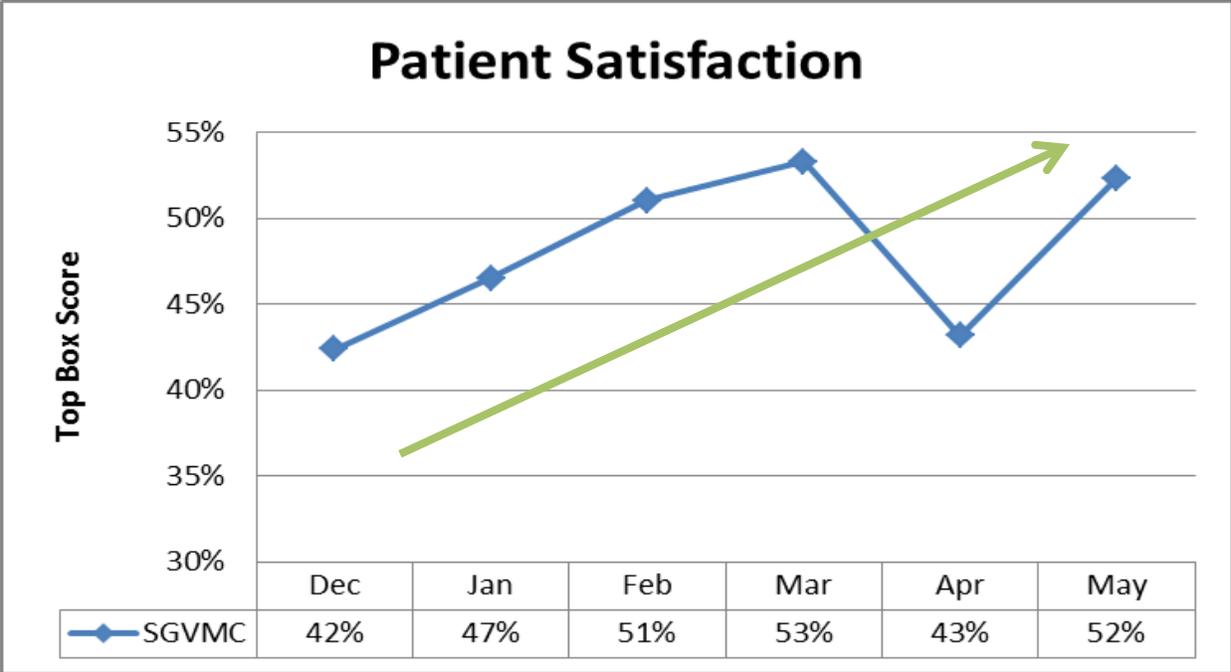
The SGVMC LEAN Initiative created a more efficient ED Process through the re-engineering of the Fast Track.



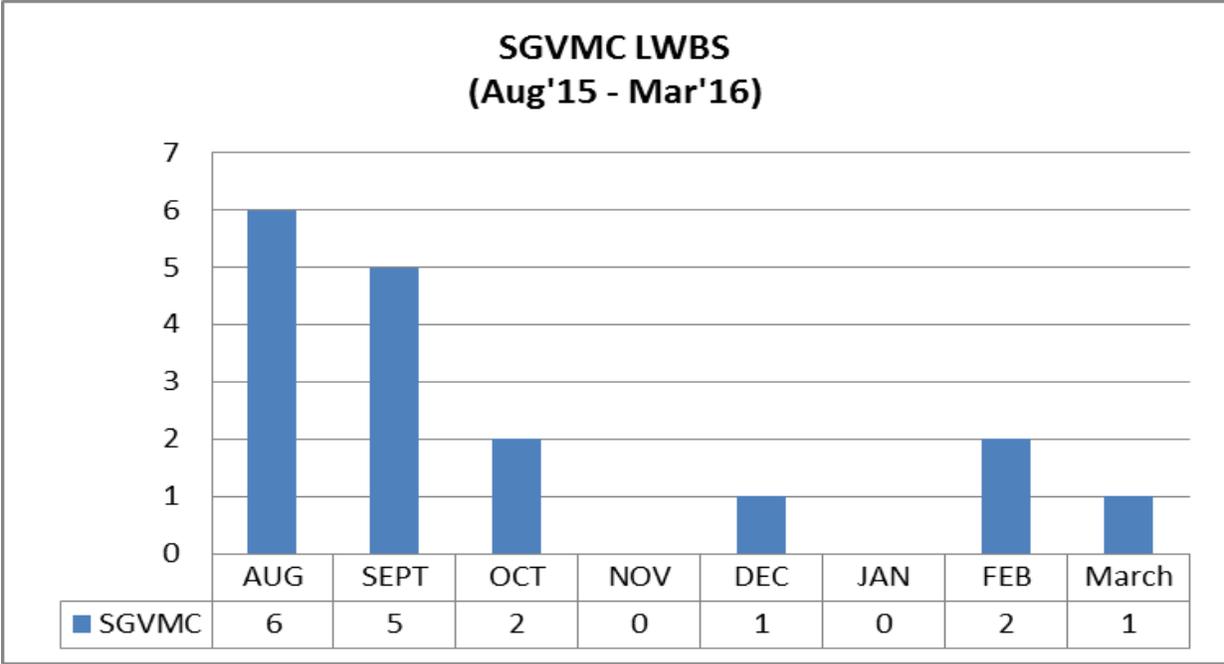
The Fast Track success had a direct impact on overall length of stay for SGVMC’s ED.



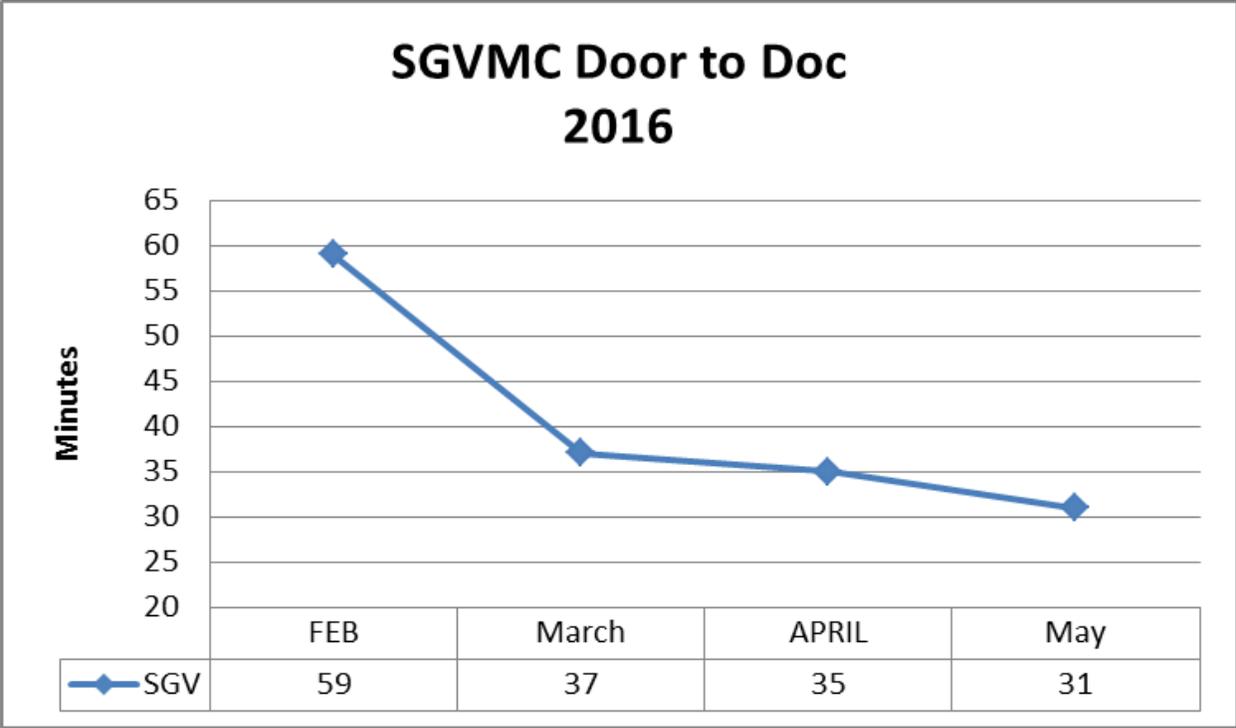
The rise in SGVMC ED patient satisfaction scores coincide with the improvements created by the LEAN initiative. Percentages represent Top Box Score (percentage of the patients who responded “very good” on the survey).



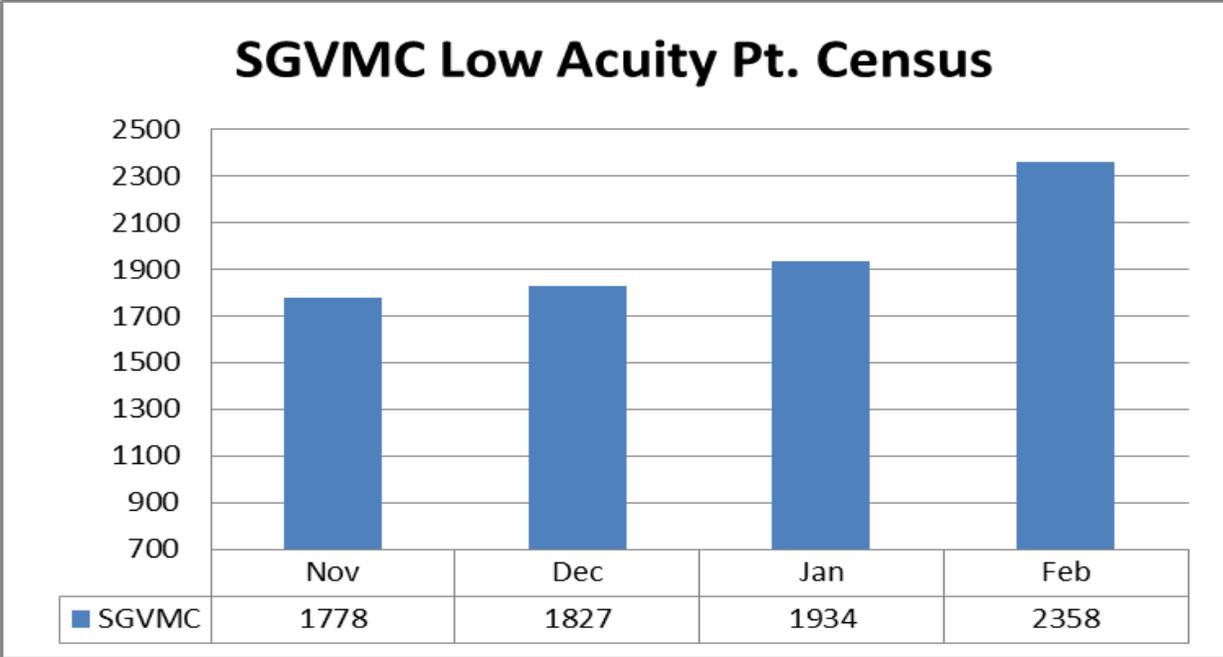
Due to quicker face time with patients, a decrease in left without being seen occurred.



With the implementation of LEAN, physicians were able to see patients sooner after arrival.



Through FT improvement, SGVMC clinicians were able to deliver care to more patients.



6. Discuss the significance of the results. How do the results demonstrate outstanding achievement?

Through LEAN methodology, SGVMC’s LEAN team eliminated waste, and focused on value adding activities to decrease LOS minutes. With the exception of a 22% increase in lower acuity patient census in February 2016 due to flu season, SGVMC’s ED was able to successfully examine and treat lower acuity patients in less than two hours. SGVMC is now treating more patients in the ED by streamlining lower acuity patients through FT. With the ACA’s healthcare accessibility, SGVMC is making the necessary changes to accommodate the rapid increase of ED visitors.

SGVMC improved the ED Patients Experience with Care (ED PEC) top box percentage, and enhanced the community’s reputation of our ED. Social media is an essential tool under the AHMC Healthcare system to accurately determine how the community perceives our hospital. SGVMC’s Yelp star rating has improved from the beginning of the ED initiative. The hospital has received multiple positive reviews regarding the ED (See table 1).

Table 1. Sample Yelp Comments

Date	Yelp Stars	Comment
01/12/2016	5	<p>“We love San Gabriel Hospital! Husband came in with an emergency and was seen asap. The patient care and staff are superb. Dr. Levin always very compassionate and explains his recommendations thoroughly. This is the 3rd time we have been seen here and are always very appreciative to have a great Hospital close to home. THANK YOU San Gabriel Medical Center!!”</p>
05/09/2016	5	<p>“Thank you so much for all the nurses that took care of my husband. The ER nurses were so extremely helpful and inserted 2 IVs for iv fluids right away. I'm grateful for the ambulance. For taking him here for immediate care. My husband and I would like to thank a few nurses who took their time out to come every hour to look after him and ask how he is doing. The nurses are on 3rd floor. Sara (night shift) and Cynthia (day night). They not only do their work but went out of their way to help my husband through the stay here.”</p>

With a strong focus on a united interdisciplinary team, we established stronger teamwork in the ED. A veteran SGVMC ED nurse mentioned, “I worked at SGVMC’s ED for over 20 years and I am happy to see that our opinion matter on how we can help improve the ED process.” Physicians, mid-level providers, nursing staff and other ancillary staff championed the process change to secure buy-in from all stakeholders. SGVMC strives to improve patient experience and patients’ safety with compassion and care from the frontline staff.

7. Describe sustainability and scaling of the achievements.

By decreasing the FT LOS from 168 minutes to 87 minutes, this successful achievement positively influenced the entire ED. The success of discharging low acuity patients with a shorter amount of time equated to free beds for higher acuity patients who required more intense care. Patients were impressed with the short amount of wait time before being treated by a triage nurse, in addition to the immediate care from the providers’ medical exam.

Replication of the SGVMC LEAN project was executed by administrative leaders across the six other hospitals in the AHMC system. Site visits to SGVMC were scheduled for these leaders to identify the changes, and how these changes were accomplished. Change leaders joined LEAN meetings on a weekly basis to better familiarize themselves with LEAN, the LEAN methodology, and the importance of evidence-based data.

8. Describe key lessons learned and any advice to colleagues who might try to undertake a similar effort.

From SGVMC’s ED initiative experience, the process improvement team gained valuable insights to facilitate future change projects. These lessons would prove to be invaluable among other organizations who hope to undertake a similar journey:

1. Frontline staff involvement: The success of any LEAN projects is contingent upon a thorough understanding of the current process. Instead of reliance on standard operation procedures, frontline staff was engaged to the change effort for improvement solutions and implementation. In the current FT project, the participating nurses led the efforts to reorganize supplies and physical space in FT. These nurses then became strong advocates of the initiative and promoted the changes among their peers. As an example, FT staff was able to place 2 additional recliners and 1 bed to increase the FT capacity to treat 5 patients at once, and truly adapted the LEAN principle of “do more with less”. Without the support and buy-in from the frontline staff, the project would not have been as successful.
2. Data-driven initiative: The team must prioritize the projects based on its potential impact with the utilization of past and current data. SGVMC’s data displayed patients with low acuity accounted for more than 70% of all ED patients. Most of the low acuity patients were delayed due to FT unavailability and poor coordination. Low acuity patients experienced a longer LOS than patients with high acuity. Given its complexity, any improvement projects must use data to identify the scope and ensure focus on the root opportunities presented before the team—one of the example for SGVMC concluded with adjusting the FT operating hours from 12 pm to 12 am, to 10 am to 12 pm. This change was initially met with strong opposition from the providers’ group due to increasing hours. The process improvement team was able to showcase data that the number of FT patients increased around 10 AM.

Through the implementation of the ED initiative, the process improvement team was able to incorporate frontline staff and patient feedback into re-engineering of ED process. Some of the major achievements include increased bed capacity to address the surge in patients with lower acuity, restructured process to allow patients to be seen by providers as soon as they are in the FT, and improved patient care with dedicated FT staff.

ED Initiative at SGVMC is an ongoing process which requires total staff involvement to monitor and sustain improvements towards better patient care. The lessons learned in this project will be applied to future projects to continuously modify the different processes to better suit the fast-paced ED environment of today.