

**Quality and Productivity Commission**  
**30<sup>th</sup> Annual Productivity and Quality Awards Program**  
**“Heritage of Excellence”**

**2016 APPLICATION**

Title of Project (Limited to 50 characters, including spaces, using Arial 12 point font):

**NAME OF PROJECT: DECREASING OVMC EMERGENCY ROOM LENGTH OF STAY**

**DATE OF IMPLEMENTATION/ADOPTION:** **OCTOBER 2013 – (ONGOING)**  
 (Must have been implemented at least one year - on or before July 1, 2015)

**PROJECT STATUS:**  Ongoing  One-time only

**HAS YOUR DEPARTMENT PREVIOUSLY SUBMITTED THIS PROJECT?**  Yes  No

**EXECUTIVE SUMMARY:** Describe the project in 15 lines or less using Arial 12 point font. State clearly and concisely what difference the project has made.

1 The project’s goal was to decrease the Emergency Room (ER) average length of stay  
 2 (ALS) by using Lean Six Sigma (LSS) strategies. LSS is a data-driven methodology to  
 3 improve performance by systematically removing waste and minimizing defects in any  
 4 type of process. Areas of improvement were 1) Triage - includes patient’s check-in and  
 5 initial nurse’s evaluation in determining the severity of the patient’s condition and the  
 6 priority for which the patient is to be seen, 2) Quick Registration (Q-Reg) is the process  
 7 of placing the patient into the electronic system with the patient’s Medical Record  
 8 Number (MRUN) number and signing a general consent to be treated and 3) Medical  
 9 screen exam (MSE), the time from the initial doctor’s exam to time of discharge home.  
 10 The patient population studied was the Emergency Severity Index (ESI) 3 (ESI 3  
 11 patients are patients needing 2 or more resources ex. Lab, Radiology, IV medications),  
 12 which made up 53% of the total ER patient population. The ALS for an ESI 3 patient in  
 13 October 2013 was 11 hours and 9 minutes which in October 2014 decreased to 6 hours  
 14 and 31 minutes. Long-term sustainability was accomplished as data showed the ESI 3  
 15 ALS in May 2016 to be 5 hours and 25 minutes.

**BENEFITS TO THE COUNTY**

(1) ACTUAL/ESTIMATED ANNUAL COST AVOIDANCE	(2) ACTUAL/ESTIMATED ANNUAL COST SAVINGS	(3) ACTUAL/ESTIMATED ANNUAL REVENUE	(1) + (2) + (3) = TOTAL ANNUAL ACTUAL/ESTIMATED BENEFIT	SERVICE ENHANCEMENT PROJECT
\$	\$	\$	\$	X

**ANNUAL = 12 MONTHS ONLY**

<b>SUBMITTING DEPARTMENT NAME AND COMPLETE ADDRESS</b> Department of Emergency Medicine Olive View UCLA Medical Center 14445 Olive View Drive, Sylmar CA 91342	<b>TELEPHONE NUMBER</b> (818)364-4320
<b>PROGRAM MANAGER’S NAME</b> Meixine Song RN, SSNII	<b>TELEPHONE NUMBER</b> (818)364-4859  <b>EMAIL</b> msong@dhs.lacounty.gov
<b>PRODUCTIVITY MANAGER’S NAME AND SIGNATURE</b> <small>(PLEASE CALL (213) 893-0322 IF YOU DO NOT KNOW YOUR PRODUCTIVITY MANAGER’S NAME)</small> Gerardo Pinedo  SIGNATURE ON FILE	<b>DATE</b> 6/30/2016  <b>TELEPHONE NUMBER</b> 213-240-8104 <b>EMAIL</b> GPINEDO@DHS.LACOUNTY.GOV
<b>DEPARTMENT HEAD’S NAME AND SIGNATURE</b> Mitchell H. Katz, M.D.  SIGNATURE ON FILE	<b>DATE</b> 6/30/2015  <b>TELEPHONE NUMBER</b> 213-240-8101

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**1<sup>st</sup> FACT SHEET – LIMITED TO 3 PAGES ONLY:** Describe the **Challenge, Solution, and Benefits** of the project. State clearly and concisely what difference the project has made. Use Arial 12 point font

**Challenge**

Prior to the project, the average length of stay for the discharged ESI 3 patient in October 2013 was 11 hours and 9 minutes. Patients waited in line to check-in, waited in the waiting room to be called by Registration and waited again to be evaluated and prioritized by the triage nurses. Patients walked back and forth to Registration, back and forth to chairs in the waiting room, then back and forth to the triage nurses. These were just the initial steps for a patient to be seen in the ER. Even after being placed into an ER bed, waiting times between nurse and doctor evaluations, lab/diagnostic tests and their results, waiting for treatment to be provided - all added to their length of stay. The longer the stay, the more frustrated and anxious the patients became. “Bottlenecks” in the workflow and the vicious cycle of staff accepting that this was the norm and therefore not proactively moving patient care forward were effects of the inefficiency. The challenge for the project was that the staff needed to “buy in” to the changes proposed in the project. ER staff consisted of 100 providers (attendings, residents, nurse practitioners) and 140 nursing staff. ER lab/phlebotomy and the Radiology department working in the department, also needed to participate in the project. Staff education and constant reinforcement over a 24 hours/7 days a week operation would be important to foster acceptance and execution. Lastly, the Affordable Care Act opened its first enrollment during this time. Was this going to affect the data? Would the amount of ER patients decrease? And with the decrease, would this alter the interpretation of the results?

**Solution**

Lean Six Sigma principles of providing value to the customer and maximizing efficiency was an ideal guide to improve the patient experience by reducing ER average length of stay. The ER electronic health record program provided time stamp data to map patient steps and time spent at each step. Monthly reports on ER metrics (total patients, patients discharged, patients admitted, length of stay, etc.) were generated. It was determined that the ESI 3 discharged home patients made up the bulk of the ER population, so data from this group was studied to achieve maximum results. A flow chart was created with time stamps identified the steps of the ESI 3 discharged home patient. The activities which provided value to the patient (customer) and steps that did not create value (waste) were identified. To eliminate the extra time and steps, the physical layout of check-in and Q-reg were changed. An unused area of the waiting room (originally designed for a children’s play area) was redesigned to house both check-in and Q-reg.

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The redesign included a counter top and three computers/computer lines, electric lines, and a printer. No new equipment was purchased for the area. Olive View Facilities department performed minor remodel (counter, shelves, phone, and computer lines). IT provided extra computers and a printer from storage. When the nurse checked-in the patient, the patient was able to step immediately left to the Registration staff to receive Q-reg, then move forward to triage. With the change of electronic systems from Wellsoft to Cerner, the patient now is checked in and Q-registered at the same time by the nurse, eliminating the extra step of seeing a Registration staff. The Pre-project workflow required patients checking in, waiting, triage, and then waiting back again in the waiting room workflow. Charge Nurses would select patients to be brought in from the “waiting to be seen” list. Post-project, patients go straight back to open beds whether they have been triaged or not. Priority would be given to those already triaged, but if no other patients were already waiting to be seen, patients would be brought straight back to the empty beds and triaged by the bedside nurses. If the ER was at full capacity and the patient could not immediately be brought back to an ER bed, the Charge Nurse and the Through-put Nurse worked together to make beds available. The nursing staff was held accountable to expedite patient treatment plans by calling lab and radiology to avoid delays in service. Wellsoft displayed a running clock on arrival time, time when an order was placed, when the nurse received the order, and when lab or radiology received and completed a task. The Charge Nurse and Through-put Nurse worked with physicians to discharge or admit patients. A discharge waiting room was created using an unused room and an internal waiting room to move patients out of beds who had discharge plans or were waiting on likely normal results before discharge. No new staff was added to open the discharge room; the discharge waiting room was staffed by the Throughput Nurse or an LVN and a clerk. This same discharge team also worked with the triage provider (Medical Screen Exam). The MSE physician/NP ordered preliminary tests for the patients still waiting for a bed. If the patient tests resulted negative and did not require further exam, the discharge team assisted MSE by discharging patients directly from the waiting room. The MSE had a goal of evaluating waiting patients in less than four hours; many saw patients almost immediately after the patients were triaged. This coincided with Customer Performance Improvement measures of 99% of the patients receiving an MSE in less than four hours. Annual Performance Evaluations for nurses also included the goal of presenting 10 charts where his or her patient was seen and discharged within 4 hours.

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**Benefits**

The success of the project was largely due to communication and teamwork amongst ER personnel. A change of culture from patients needing County health services to County health services needing the business of patient customers. The commitment of nursing and physician leadership to reinforce and keep staff accountable for flowing forward patient treatment plans was necessary to maintain the decreased length of stay. ESI 3 average length of stay for discharged home patients in October 2013 was 11 hours, 9 minutes. When the project ended in October 2014, the average length of stay was 6 hours, 31 minutes, a 42% improvement. A notable result of this project was that though the total population of ER patients from October 2013 decreased about 2%, the ESI 3 discharged population grew by 5%. Long-term sustainability was evidenced in the ESI 3 discharged patients length of stay in May 2016 to be 5 hours and 25 minutes.

The 2014 LADHS Internal Process target goal for the total ER length of stay was 442 minutes (or 7.37 hours). Not only did OVMC ER meet that goal, but the project sustained the goal with an average length of stay of 4 hours, 55 minutes for May 2015. In May 2016, another year later and with the addition of Cerner and the time issues of learning a new electronic system, the total ER patient length of stay remained at 4 hours and 57 minutes.

The benefits are obvious: improved customer service. By improving efficiency and decreasing patient wait times, sick patients may be attended to and stabilized quickly. Improving patient flow, decreasing patient’s wait times and length of stays in the ER will ultimately secure community trust and we will retain our patients.

**LINKAGE TO THE COUNTY STRATEGIC PLAN (DETAIL IS REQUIRED FOR COUNTY DEPARTMENTS): Use Arial 12 point font**

Operational Effectiveness/Fiscal Sustainability: Maximize the effectiveness of processes, structure, operations, and strong fiscal management to support timely delivery of customer-oriented and efficient public services.

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**COST AVOIDANCE, COST SAVINGS, AND REVENUE GENERATED (ESTIMATED BENEFITS TO THE COUNTY):** If you are claiming cost benefits, include a calculation on this page. You must include an explanation of the County cost savings, cost avoidance or new revenue that matches the numbers in the box. Remember to keep your supporting documentation. Use Arial 12 point font

**Cost Avoidance:** Costs that are eliminated or not incurred as a result of program outcomes.

**Cost Savings:** A reduction or lessening of expenditures as a result of program outcomes.

**Revenue:** Increases in existing revenue streams or new revenue sources to the County as a result of program outcomes.

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\$	\$	\$	\$	

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