

Quality and Productivity Commission  
**27<sup>th</sup> Annual Productivity and Quality Awards Program**  
*"Saluting County Excellence"*

**44.0**

**2013 APPLICATION**

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

**NAME OF PROJECT:** IMPROVE SEPSIS DETECTION WITH THE USE OF SUPO FORM

**DATE OF IMPLEMENTATION/ADOPTION:** July 2011  
 (Must have been implemented at least one year - on or before June 30, 2012)

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

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

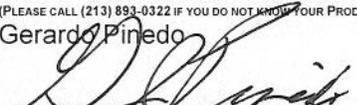
**EXECUTIVE SUMMARY:** Describe the project in 15 lines or less using Arial 12 point font. Summarize the problem, solution, and benefits of the project in a clear and direct manner

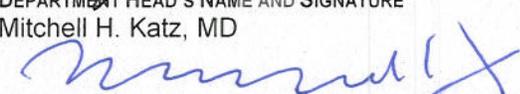
1 A major factor for the choosing of the project is that studies demonstrate a high mortality  
 2 death rate amongst those diagnosed with sepsis. The target diagnosis for data  
 3 monitoring are those diagnosed with sepsis and septic shock. These diagnoses are in  
 4 relation to inflammatory states resulting from a systemic response to bacterial infection.  
 5 In severe sepsis and septic shock there is critical reduction in tissue perfusion and can  
 6 harm and kill patients if not treated quickly. Currently, approximately a quarter of the  
 7 patients with severe sepsis and septic shock die in public hospitals. Los Angeles County  
 8 DHS hospitals had 57,591 adult admissions with 1.66% mortality or 961 deaths during  
 9 fiscal year 2009-2010. There were 1,164 patients admitted with sepsis; 344 of those  
 10 patients died with a sepsis mortality rate of 29%. Meaning that our total hospital deaths  
 11 are related to sepsis. The goal was to decrease our sepsis mortality from 29% to 28%,  
 12 which was projected to save 19 lives per year. The sepsis reduction team was  
 13 assembled to detect the signs of sepsis in an expedited time, by using the standardized  
 14 SUPO form to reduce deaths which have currently dropped to approximately 7%. Also  
 15 by impacting the mortality rate, we are decreasing financial burden to the hospital.

(1) ESTIMATED/ACTUAL ANNUAL COST AVOIDANCE	(2) ESTIMATED/ACTUAL ANNUAL COST SAVINGS	(3) ESTIMATED/ACTUAL ANNUAL REVENUE	(1) + (2) + (3) TOTAL ESTIMATED/ACTUAL BENEFIT	SERVICE ENHANCEMENT PROJECT
\$	\$	\$	\$ 0	X

SUBMITTING DEPARTMENT NAME AND COMPLETE ADDRESS Olive View -UCLA Medical Center, Quality Services 14445 Olive View Dr., Trailer Q.S. Sylmar, CA 91342	TELEPHONE NUMBER (818) 364-4646
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PROGRAM MANAGER'S NAME Susan Stein, MD	TELEPHONE NUMBER (818) 364-3030  EMAIL SStein@dhs.lacounty.gov
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PRODUCTIVITY MANAGER'S NAME AND SIGNATURE <small>(PLEASE CALL (213) 893-0322 IF YOU DO NOT KNOW YOUR PRODUCTIVITY MANAGER'S NAME)</small> Gerardo Pinedo 	DATE 7/1/2013  7/16/13	TELEPHONE NUMBER (213) 240-8104  EMAIL gpinedo@dhs.lacounty.gov
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DEPARTMENT HEAD'S NAME AND SIGNATURE Mitchell H. Katz, MD 	DATE 7/1/2013	TELEPHONE NUMBER (213) 240-8101
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**FACT SHEET – LIMITED TO 3 PAGES ONLY:** Describe the **Challenge, Solution, and Benefits** of the project, written in plain language. Include a discussion of the technology and linkage to the County Strategic Plan. The description should identify Performance Measures.

**CHALLENGE**

**SOLUTION**

**BENEFITS**

LINKAGE TO THE COUNTY STRATEGIC PLAN (DETAIL IS REQUIRED FOR COUNTY DEPARTMENTS):

[http://ovweb1.ovmc.net/departments/Quality%20Services/web/Waiver/SepsisWaiver\\_SelftStudyGuide.pdf](http://ovweb1.ovmc.net/departments/Quality%20Services/web/Waiver/SepsisWaiver_SelftStudyGuide.pdf)

**Project**

Strategic goal number four under the Los Angeles County Department of Health Services Delivery System Reform Incentive Program: Assure the long-term financial well-being of the safety net health services in Los Angeles. Strategy six: maximize services within available resources. Objective three: Assess utilization data to identify opportunities for decreasing unit costs by increasing the provision of services. The identified opportunities was to implement a nurse driven protocol to early identified a septic patient and provide prompt intervention to break the cycle of sepsis.

**Challenge**

Currently, approximately a quarter of the patients with severe sepsis and septic shock die in public hospitals. Los Angeles County (LAC) Department of Health Services (DHS) hospitals had approximately 57,591 adult admissions with 1.66% mortality or 961 deaths during fiscal year 2009-2010. There were 1,164 patients admitted with sepsis; 344 of those patients died with a sepsis mortality rate of 29%. Sepsis was a diagnostic code on the 344 patients out of our 961 patients that died, meaning 36% of our total hospital deaths are related to sepsis. If we could decrease our sepsis mortality from 29% to 28%, we could save 19 lives a year. By getting our sepsis mortality to 20%, we could save 112 lives a year. One of the main challenges is to create a standardized process to identify and treat the targeted population yet maintaining a budget and not impacting the inpatient work flow where the staff may feel overwhelmed and not willing to test a new process. The waiver metrics encourage our staff to provide a "bundle" of evidence based care to optimize the outcomes for our patients.

**Solution**

LAC DHS has a commitment for urgent improvement in care quality and patient safety. The implementation of the nurse driven form Sepsis Until Proven Otherwise (SUPO), allows our nurses to screen and rapidly diagnose our patient's, have immediate access to antibiotics allowing us to meet the elements of the waiver bundle. These implemented processes improve the detection and management within the suggested guidelines. Our interventions and improved processes monitoring are based on the Society of Critical Care Medicine's (SCCM) Surviving Sepsis Campaign that was

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designed to establish reliable detection and treatment for severe sepsis and septic shock. Interventions include improving administration of the Sepsis Resuscitation Bundle using the SUPO form, measuring compliance, and tracking mortality percentage for patients diagnosed with severe sepsis and septic shock.

The Sepsis Resuscitation Bundle is made up of four elements which include 1) measuring serum lactate to further identify septic patients, 2) obtaining blood cultures prior to antibiotic administration, 3) administering broad-spectrum antibiotics within 1 hour of inpatient patients, and 4) delivering a minimum of 20 ml/kg of fluids. A key step to implementing the Sepsis Resuscitation Bundle is the early recognition of the patient that is at risk for septic shock. The first step for improvement process was to educate the staff to recognize the significance of the sepsis symptoms and mobilize treatment with the same urgency as staff have been conditioned to do for heart attack patients. The SCCM's Surviving Sepsis Campaign suggests that the bundle elements be incorporated in order sets and protocols so that treatment is not chaotic and fragmented. Measuring compliance with the Sepsis Resuscitation Bundle is now standardized in how the data collection occurs. Therefore, the creation of a monitoring system has assisted in sharing data for compliance as well as measuring outcome. Steps taken to implement the changes:

1. Anchor (most likely to treat the offending organism) antibiotics identified and be made readily available to nurses via Pyxis .
2. Phlebotomy has an assigned Sepsis pager to facilitate timely response
3. Administration, providers and nursing were educated in the expected process flow.
4. Sepsis Until Proven Otherwise (SUPO) form was created to meet the required sepsis guidelines and be able to be implemented as a nurse driven standardized nursing protocol.

**Benefits**

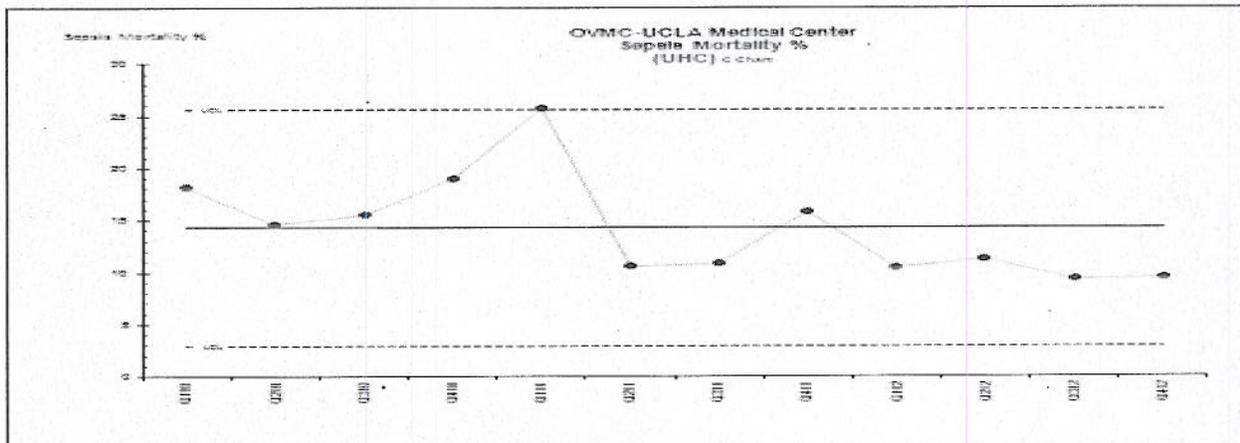
The data since implementation demonstrates an increased number of patients diagnosed with Sepsis and Severe Sepsis, however, even with the increment the mortality rate has improved:

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In addition to reducing mortality rate, the staff sepsis bundle compliance increased to 64% from 20%. A revised SUPO form was implemented on March 2013. We are in hopes that these will drive the sepsis bundle compliance up to 70%.

COUNTY OF LOS ANGELES OLIVE VIEW-UCLA MEDICAL CENTER DEPARTMENT OF HEALTH SERVICES

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**SEPSIS STANDARDIZED SCREENING**  
**SUPO (Sepsis Until Proven Otherwise) Screening Form**

Date: \_\_\_/\_\_\_/\_\_\_ Time: \_\_\_:\_\_\_  AM  PM

HR	SBP	TEMP	RR
<input type="checkbox"/> > 90	<input type="checkbox"/> < 90	<input type="checkbox"/> > 38° C (100.4° F) or < 36° C (96.8° F)	<input type="checkbox"/> > 20
HR: _____	SBP: _____	Temp: _____	RR: _____

**Positive screen: Any two abnormal vitals → Notify Physician/NP immediately and draw 2 sets of blood cultures and serum lactic acid (lactate). Ask Provider to evaluate patient within 30 minutes for fluids and antibiotics.**  
 Lab order numbers: \_\_\_\_\_

Provider (name) notified: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_ Time: \_\_\_:\_\_\_  AM  PM  
 Note: If Positive screen and Blood Cultures have been drawn within 24 hours, draw ONLY serum lactate.  
 \*\* Initiate form every 8 hours.

For Sepsis Screening Phlebotomist, call: x4038: M-F evenings/nights (4:30 PM-8:00 AM) and anytime weekends/holidays  
 x3039: M-F daytime (8 AM-4:30 PM)

*Print/sign below and file in "Physician Orders" section of the chart*

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**COST AVOIDANCE, COST SAVINGS, AND REVENUE GENERATED (ESTIMATED BENEFIT):** 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.

**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.

(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**