



SMMC Cath Lab Team

The State of STEMI Care, Taking the Next Step

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A handful of states have been early adopters for the regionalization of ST Elevation Myocardial Infarction (STEMI) Receiving Centers, and California is one of them. STEMI Receiving Centers (SRCs) work within geographic regions, partnering with local emergency medical services (EMS), pre-hospital transport agencies and transferring facilities to expedite care of STEMI patients and facilitate PCI times of less than 90 minutes. If the estimated time of arrival is less than 30 minutes, a positive pre-hospital ECG and possibly a manual read or transmitted ECG by the EMS crew will direct a patient to the nearest SRC.

Some 400,000 persons in the U.S. experience a STEMI each year. Of those, 30 percent fail to receive any reperfusion strategy. For every 15 minutes beyond the 90-minute window, there is an increase in mortality. Only half of U.S. hospitals have cardiac catheterization laboratories, and of those with cath labs, only half are equipped to perform PCI.

SRCs operate in much the same way as the “Golden Hour of trauma” concept, which has been established for a number of years, particularly with motor vehicle accidents. Yet, deaths from MI are three times more common than deaths from motor vehicle accidents. The SRC concept is to

have a patient sent to a destination (SRC) hospital, which is equipped to handle STEMI on a 24/7/365 basis. The main hypothesis in favor of establishing SRCs is that the more procedures a facility performs, the better the outcomes.

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The American College of Cardiology (ACC) and the American Heart Association (AHA) have been leaders in promoting PCI times of less than 90 minutes. The ACC’s Door-to-Balloon Alliance (D2B) began in November 2006 and has more than 1,000 national and international hospitals participating. The D2B Alliance for Quality is a Guidelines Applied to Practice project (GAP). Many tools are available at their Web site www.d2balliance.org to achieve this goal.

The AHA began Mission Lifeline in May 2007, and now the ACC and AHA are working to coordinate the two programs. Mission Lifeline information is available at www.american-heart.org. Other strategic partners in these efforts include the National Heart, Lung and Blood Institute and the Institute for Healthcare Improvement.

Stepping Beyond D2B

Ivan Rokos, M.D., F.A.C.E.P., who has lectured extensively on the D2B topic, proposes raising the D2B bar higher by focusing on E2B. E2B time is ECG time-to-balloon, and it is the first positive pre-hospital ECG, which is time-stamped, that sets the clock in motion. The goal of E2B is to attain a positive pre-hospital ECG to balloon time less than 90 minutes.

Barriers for E2B do exist and include the potential for false positive reads. However, these barriers can be addressed with ongoing educational efforts for pre-hospital personnel in interpretation, access or proper lead placement and not “over-triaging” the use of pre-hospital ECG.

We can go even further than E2B by considering F2B, or first dispatch-to-balloon time. The F2B clock begins in motion when the call originates until the balloon inflation. Finally, there is S2B or the first symptom-onset-to-balloon time, which, of course, measures how well the community understands symptoms and is educated about accessing emergency cardiac care. This time includes first symptom onset to balloon time.

Becoming a Destination Facility

St. Mary Medical Center in Apple Valley, Calif., recently finished their site visit for becoming a STEMI-destination facility. The site visit included an assessment of the medical records of the last 20 STEMI patients. Of those patients, 75 percent arrived by EMS. We had kept good documentation on why two patients did not have a pre-hospital ECG. The remaining patients all had positive pre-hospital ECGs that confirmed AMI on the computer printout as well as paramedic notation of ST elevation. All of these also correlated later to the coronary anatomy and culprit lesion. Only one outlier was greater than 90 minutes.

Having perfected St. Mary's D2B program at 92 percent of the time for 2008, we plan to focus on E2B with our EMS partners in 2009. Following that, we will move to F2B, then S2B. SMMC would love to hear about your D2B experiences through *Cardiology*.



Lucken



Devineni

Lucken and Devineni are both at SMMC.

CNE Now Available for D2B Participation

The ACC is pleased to announce that continuing nursing education credits (CNE) are now being provided for nurses who participate in the D2B national quality improvement program at their hospitals.

The Door-to-Balloon: An Alliance for Quality (D2B) is a national quality improvement program for hospitals that perform primary percutaneous coronary intervention (PCI) on non-transfer ST-segment myocardial infarction (STEMI) patients. The D2B campaign provides all primary PCI hospitals with the evidence-based strategies, supporting tools and educational resources necessary to achieve D2B times of 90 minutes or less. Accomplishing this level of performance is an organizational challenge for many institutions and represents an opportunity to improve the quality of patient care in a meaningful way.



An Alliance for Quality

The Performance Improvement (PI) continuing education process involves three separate but integrated stages of learning —

Stage A: learning from active involvement in identifying and analyzing important organizational and individual performance gaps

Stage B: learning from designing interventions to close performance gaps identified in Stage A and implementing the interventions to patient care using suitable tracking tools

Stage C: learning from evaluating the PI effort, reflecting on performance in practice outcomes and comparing to the assessment done in Stage A.

All three stages are used to develop a complete, structured performance improvement activity.

If your organization has been involved in this quality improvement initiative and you have been actively involved in the effort for at least three months, you may qualify for the appropriate education credits. You will need to complete all three stages of ACC's D2B Performance Improvement, then complete and submit the Attestation Form available on Cardiosource in order to qualify for nursing continuing education. You are eligible to claim up to 20 hours of continuing education (CE) credits for your participation in the D2B Performance initiative.