Minutes Matter in the R.A.C.E. to Improve STEMI Care

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Background
Cone Health formed its multi-disciplinary team in 2003 prior to implementing the North Carolina R.A.C.E. (Reperfusion of Acute Myocardial Infarction in Carolina Emergency Departments) program in 2005 which was designed to focus on processes for STEMI (S-T elevation myocardial infarction) care and reduce door-to-device time. This team consists of cardiovascular lab (CV) leaders and staff, ED leadership and staff, ED physicians, local EMS services and CareLink critical care transport staff, 9-1-1 Communications, Rapid Response, Cardiologists, Cardiac Rehab, Nursing, Pharmacy, and Quality staff.

Methodology
All STEMI patients from venues including ED, EMS, and hospital referrals are included in our data results. As a Society of Cardiovascular Patient Care Chest Pain Center PCI accredited hospital we implemented process improvement strategies for in-house STEMI visits as well.

The team identified and implemented process changes to improve STEMI care including:
- Creation of a ‘One Call’ STEMI Activation Protocol using CareLink Communications. EMS, ED and In-house STEMI activation by calling one number, 24/7. In response, CareLink Communications staff simultaneously notifies all Code STEMI responders.
- All EMS Services were educated on identifying STEMI patients in the field and rapidly activating the STEMI protocol.
- ED staff and ED Physician roles have become more focused on rapid triage, decision-making, and eliminating barriers to CV Lab transport.
- CV Lab staff and Rapid Response RN meet the patient in the ED and facilitate transport to the CV Lab.
- Rapidly provide process and outcome feedback to all involved in each case.
- Rapid Response RNs are qualified to interpret 12-Lead EKGs and activate Code STEMI for inpatients.
- Provided focused STEMI education and drills for “non-cardiac” hospital areas such as acute rehab.
- Dissemination of Findings: Presentations at monthly R.A.C.E. team meetings.
- Regular feedback to EMS and CareLink personnel, ED and CV lab staff, referral hospitals and physicians.

From the American College of Cardiology Quality First SmartBrief on September 5, 2013, researchers said:
“The rate of death among heart attack patients who did not get treatment within 90 minutes was about double that of patients who received treatment in 90 minutes or less.”

Outcomes
- Median D2D time decreased from > 200 minutes in 2003 to 40 minutes in 2013.
- Median D2D consistently < 90 minutes in 2012 and 2013.
- Patient’s coronary arteries are opened very quickly, thus improving patient outcomes by decreasing morbidity and mortality from 10-12% to 4-5% during the period of 2003-2013.
- Hospital length of stay for the stable STEMI with PCI population decreased from 4.0 days to 3.0 days which is the national standard.