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

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SILVER RECEIVING 2013 MISSION: LIFELINE — American Heart Association.

The American Heart Association recognizes this hospital for achieving 85% or higher composite adherence to all Mission: Lifeline STEMI Receiving Center Performance Achievement indicators for consecutive 12-month interval and 75% or higher compliance on all Mission: Lifeline STEMI Receiving Center quality measures to improve the quality of care for STEMI patients.

ACCREDITED — Society of Cardiovascular Patient Care — CPC — Chest Pain Center — PCI

Joint Commission International — Quality Approval

Organization Accredited by Joint Commission International

CONE HEALTH® Moses Cone Hospital

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.

Purpose

Demonstrate how a dedicated multi-disciplinary team focused on STEMI care can:

- Decrease door-to-device (D2D) time (benchmark <90 minutes)
- Improve patient outcomes by decreasing morbidity and mortality
- Decrease hospital length of stay (LOS) for the stable STEMI with percutaneous coronary intervention (PCI) population

Study Design

- Implementation of a RACE/STEMI Coordinator role to direct the multi-disciplinary team
- On-going education for physicians, EMS, ED and hospital staff regarding STEMI system of care
- Daily/monthly review of all STEMI activations compared with AHA and ACC guidelines to ensure that each patient's care meets state and national standards
- Provide timely follow-up with caregivers and RACE team members
- Data analysis via internal database as well as submission of data to the National Cardiology Data Registry's ACTION and CathPCI registries to identify trends or opportunities for improvement

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 STEMIs 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

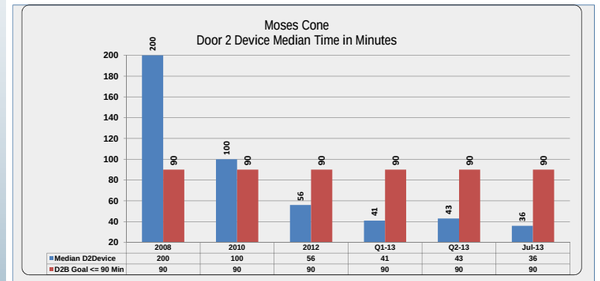
Dissemination of Findings

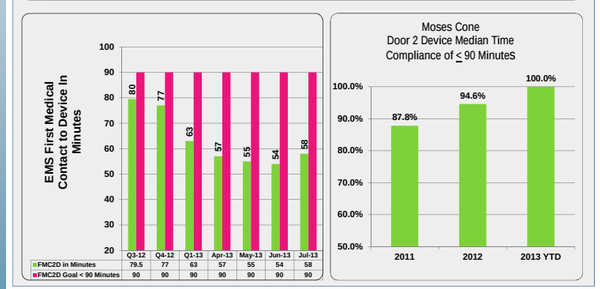
- Presentations at monthly R.A.C.E. team meetings
- Regular feedback to EMS and CareLink personnel, ED and CV lab staff, referral hospitals and physicians

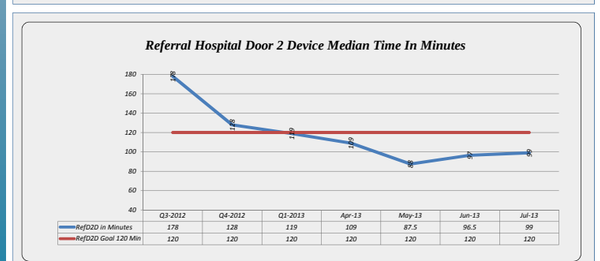
From the American College of Cardiology Quality First SmartBrief on September 5, 2013, researchers said:

"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."

Data Results







Outcomes

- Median D2D time decreased from > 200 minutes in 2003 to 40 minutes in 2013
- Median D2D consistently 50% of the benchmark of < 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

Conclusions

The implementation of a multi-disciplinary R.A.C.E. team can decrease door-to-device time and improve patient outcomes. This impacts all 3 aspects of Triple Aim Performance:

Quality: Patient's coronary arteries are opened quickly with return of normal coronary blood flow and decreased cardiac muscle damage. This leads to improved patient outcomes and decreased morbidity and mortality.

Cost: Improved patient outcomes reduce length of stay and readmission rates

Service: Improved patient satisfaction by return to activities of daily living

Strategic Target

AHA and ACC Guidelines, N. C. R.A.C.E. Program, and NCDR Registries