Action Registry - GWTG

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Sr. Director, Mission: Lifeline SouthWest Affiliate
American Heart Association
June 3, 2011
# Texas Hospitals Contracted to Participate in NCDR Action Registry-GWTG 2010 ~ 2/3 of Texas STEMI Receiving Hospitals

<table>
<thead>
<tr>
<th># Texas Hospitals</th>
<th>Est. # Texas PCI/STEMI Receiving Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>95 (77 actively entering data)</td>
<td>150</td>
</tr>
</tbody>
</table>
Current Site Distribution

Active Sites = 621

Last updated: 9/22/2010
Unique In That It Includes Many SYSTEM Data Elements

- Symptom Onset
- ECG Findings, Including Pre-hospital ECG
- Pre-hospital Cardiac Status
- Means of Transport
- First Medical Contact
- ANY Medications Administered up to 24 hours BEFORE or AFTER FMC with pre-hospital provider
27% of the primary PCI patients are transferred in
First Door (Referral Facility Arrival) to Balloon

<table>
<thead>
<tr>
<th></th>
<th>Texas 2010</th>
<th>Nation 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within 90 minutes</td>
<td>43%</td>
<td>24%</td>
</tr>
<tr>
<td>Median time in minutes</td>
<td>96 minutes</td>
<td>115 minutes</td>
</tr>
<tr>
<td>Arrived at referral facility by EMS</td>
<td>79 minutes</td>
<td>116 minutes</td>
</tr>
<tr>
<td>Arrived at referral facility by POV</td>
<td>107 minutes</td>
<td>114 minutes</td>
</tr>
</tbody>
</table>

All STEMI admissions indicated for immediate primary PCI who were transferred in, had STEMI diagnosed on first ECG, and had a reported first device activation date/time AFTER arrival at the first facility, excluding patients administered thrombolytics prior to PCI, non-primary PCI, documented non-system reason for delay in PCI, and arrival at first facility to PCI time > 12 hours.
## STEMI Referral Facility/Non-PCI Hospital LOS

<table>
<thead>
<tr>
<th>Median Length of Stay at Referral Facility</th>
<th>Texas 2010</th>
<th>Nation 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>65 minutes</td>
<td>66 minutes</td>
</tr>
</tbody>
</table>

*Median length of stay at referral facility: All STEMI admissions who were transferred in and have a reported date/time of transfer from outside facility after arrival at outside facility, excluding patients with length of stay at outside facility >12 hours.*
# Symptom Onset to Medical Contact

<table>
<thead>
<tr>
<th></th>
<th>Texas 2010</th>
<th>Nation 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Time from Symptom Onset to First Medical Contact</td>
<td>45 minutes</td>
<td>51 minutes</td>
</tr>
<tr>
<td>Median Time from Symptom Onset to Arrival via POV</td>
<td>122 minutes</td>
<td>119 minutes</td>
</tr>
</tbody>
</table>

*Symptom Onset to First Medical Contact: All STEMI admissions who arrived via EMS AND have a reported date/time of symptom onset *before* first medical contact, excluding transfers in.*

*Symptom Onset to Arrival via POV: All STEMI admissions who arrived via POV AND have a reported date/time of symptom onset *before* arrival, excluding transfers in.*
## Means of Transportation to PCI Hospital

<table>
<thead>
<tr>
<th>Arrival Mode (non-transfer patients)</th>
<th>Texas</th>
<th>Nation</th>
</tr>
</thead>
<tbody>
<tr>
<td>POV</td>
<td>44%</td>
<td>38%</td>
</tr>
<tr>
<td>EMS</td>
<td>50%</td>
<td>59%</td>
</tr>
<tr>
<td>Mobile ICU/Air</td>
<td>6%</td>
<td>3%</td>
</tr>
</tbody>
</table>
AR-G Entry Criteria

Inclusion Criteria

• Patients must present for acute ischemic symptoms, typically reflected by a primary admission diagnosis of non-ST segment myocardial infarction (NSTEMI) or ST segment myocardial infarction (STEMI). Patients must meet the following criteria to be included in the ACTION Registry®–GWTGTM:

• Patients must present with acute ischemic symptoms within the previous 24 hours, typically reflected by a primary diagnosis of STEMI or NSTEMI. Patients admitted for other clinical conditions who subsequently develop the first onset of ischemic symptoms, together with persistent ST-segment elevation and/or positive cardiac markers, later during their hospitalization are not eligible.
Inclusion Criteria: STEMI

Ischemic symptoms lasting ≥10 minutes at rest within the previous 24 hours, and at least one of the following:

- Persistent ST-segment elevation ≥1 mm in two or more contiguous electrocardiographic leads
- Documented new or presumed new left bundle branch block (LBBB)
- Documentation of isolated posterior MI

Transfer patients meeting the above criteria must arrive at the participating hospital within 72 hours of the time of initial presentation to the outside hospital.
Inclusion Criteria: NSTEMI

Ischemic symptoms lasting ≥10 minutes at rest within the previous 24 hours, and positive cardiac markers defined:

- CK-MB > site reported upper limit of normal (ULN) range
- Troponin T or I > Upper Reference Limit (URL) for site assay that designates definite myocardial tissue necrosis
  OR
- Positive bedside Troponin assay

Patients identified as NSTEMI, through narrative charting or ICD9 classification, without clinical Evidence of cardiac biomarkers elevation above the threshold for infarct should not me included in the registry.

Transfer patients meeting the above criteria must arrive at the participating hospital within 24 hours of the time of initial presentation to the outside hospital. Patients who initially present with ischemic symptoms but who do not exhibit the NSTEMI (elevated cardiac markers) qualifying criteria at presentation may be included in the ACTION Registry–GWTG if they manifest the qualifying criteria during the first 24 hours of hospitalization (24-hour period begins at the time of presentation to the first hospital, if patient was transferred in from an outside hospital).
ACTION Registry-GWTG Premier

- Full AR-G Data Set
- Approximately 280 fields (not counting Section K)
- Simple/Average patient 100-150 fields
- Complicated patient 150-200 fields
- Non PCI centers 100 fields
- Higher AR-G Recognition
- Strongly encourage participants to use full data set, especially PPCI capable centers.
ACTION Registry-GWTG Limited

- 50% of full AR-G data set
- Approximately 140 fields (not counting Section K)
- Simple/Average patient 60-80 fields
- Complicated patient 80-100 fields
- Non PCI centers 60 fields
- Available to all ACTION Registry-GWTG participants.
- The form specifications have been made available to all vendors.
Data Collection Options

• Web-Based Data Capture
  – Free NCDR data collection tool
  – Interoperability between AR-G and CathPCI Registry (2010)

• Vendor-Based Data Capture
  – Interoperability between AR-G and CathPCI Registry
  – Interface with hospital EHR systems (where applicable)
  – Certified vendors include
    • Outcome Sciences, Inc.
    • LUMEDX
    • Cedaron Medical, Inc. (in process)
Pilot Audit

• **Purpose:** To ensure data submitted to the NCDR are complete, valid, accurately interpreted and collected

• **Goals:** To improve the quality of NCDR registries. Our audit program also ensures that benchmarks and comparisons provided to all NCDR participants accurately reflect registry data
Contact Information:

ncdr@acc.org

Call Center
1-800-257-4737
Hospital Report Overview

• Two types of reports:
  – STEMI Receiving Center Report (PCI Capable)
  – STEMI Referral Center Report (Non-PCI Capable)
    • pending
• Available to any hospital that:
  – Participates and submits data into AR-G (Limited or Premier Form)
  – Registers with Mission: Lifeline
  – Completes a Data Release Consent Form
• The reports are generated on a quarterly basis and can be downloaded by logging into the NCDR website.
### Overall Composite Adherence

**Site 999999**

**Mission: Lifeline Receiving Center Report: Q1/10**

*Confidential Information*

<table>
<thead>
<tr>
<th>Measure Metric</th>
<th>Care Opportunities</th>
<th>Adherence Score</th>
<th>State Adh. Score</th>
<th>Nation Adh. Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Mission Lifeline Composite Score</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>94.7%</td>
</tr>
<tr>
<td>Arrival to Primary PCI &lt;= 90 min</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>91.2%</td>
</tr>
<tr>
<td>First Medical Contact to Primary PCI &lt;= 90 min</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>56.5%</td>
</tr>
<tr>
<td>Reperfusion Therapy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>93.9%</td>
</tr>
<tr>
<td>Aspirin at Arrival</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>98.9%</td>
</tr>
<tr>
<td>Aspirin at Discharge</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>98.6%</td>
</tr>
<tr>
<td>Beta Blocker at Discharge</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>97.4%</td>
</tr>
<tr>
<td>Statin at Discharge</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>98.5%</td>
</tr>
<tr>
<td>ACE inhibitor / ARB at Discharge in LVSD</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>89.4%</td>
</tr>
<tr>
<td>Adult Smoking Cessation Counseling</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>98.3%</td>
</tr>
</tbody>
</table>

**First Medical Contact to Primary PCI <= 90 minutes**

- **Adherence Score**
  - 100th Protocol
  - 97.5%
  - 92.5%

**Distribution of Site Composite Scores**

- **Site Composite Score**
  - 99th Protocol
  - 97.5%
  - 92.5%

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[Sample Mission: Lifeline STEMI Receiving Center Report](#)
Sample Mission: Lifeline
STEMI Receiving Center Report

Table 4: Primary PCI
Site 999999
Mission: Lifeline Receiving Center Report: Q1/10
* Confidential Information *

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Last Qtr</th>
<th>Last 12 mo</th>
<th>State</th>
<th>Nation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Time from Cath Lab Arrival to First Device Activation (mins)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Median Time from First Medical Contact to Primary PCI (mins)

| Overall | % within 90 minutes | 90.0 |
| Non-Transfer-In | % within 90 minutes | 67.0 |
| Transfer-In | % within 90 minutes | 4.0 |
| % within 120 minutes | 24.0 |

Median Time from Arrival to Primary PCI (mins)

| Non-Transfer-In | % within 90 minutes | % within 90 minutes | % within 90 minutes | % within 90 minutes | % within 90 minutes |
| Non-Transfer-In | % within 90 minutes | 62.0 |
| % within 90 minutes | Arrived by EMS | 57.0 |
| % within 90 minutes | Arrived by POV | 70.0 |
| Transfer-In | % within 90 minutes | 118.0 |
| % within 90 minutes | Arrived at referral facility by EMS | 21.0 |
| % within 90 minutes | Arrived at referral facility by POV | 119.0 |
| % within 90 minutes | Arrived at referral facility by POV | 20.0 |
| % within 90 minutes | Arrived at referral facility by POV | 1.0 |
| % within 90 minutes | 117.0 |

First Medical Contact to PCI <= 90 Minutes

<table>
<thead>
<tr>
<th>Percent of Admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
</tr>
<tr>
<td>Non-Transfer-In</td>
</tr>
<tr>
<td>Transfer-In</td>
</tr>
<tr>
<td>Non-Transfer-In</td>
</tr>
</tbody>
</table>
| Arrival to PCI <= 90 Minutes
<table>
<thead>
<tr>
<th>Percent of Admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
</tr>
<tr>
<td>Non-Transfer-In</td>
</tr>
<tr>
<td>Transfer-In</td>
</tr>
<tr>
<td>Non-Transfer-In</td>
</tr>
</tbody>
</table>

FOOTNOTES
*Among EMS arrival to first facility
**Time from Arrival at Referral Facility
***Time from Arrival at Receiving Facility

Improving the System of Care for STEMI Patients

23
• 13 pages of definitions for each variable within the reports with inclusion and exclusion criteria.

• Accompanies the hospital reports and can be found at: http://heart.org/missionlifeline

- Is a reference tool to assist in the interpretation of the Mission: Lifeline Receiving Center and Referral Center Reports:
  - INTRODUCTION AND DEFINITIONS
  - INDIVIDUAL ADHERENCE AND PERFORMANCE COMPOSITE SCORES
  - BENCHMARKS
  - RISK ADJUSTMENT
  - MISSING VALUES

Improving the System of Care for STEMI Patients
Mission: Lifeline Involvement

Accreditation

Recognition

Participation

ML Hospital Registration
ML System Registration
Quality Improvement/ Data Analysis
Mission: Lifeline Recognition

Accreditation

Recognition

Registration & Participation

Improving the System of Care for STEMI Patients
Mission: Lifeline Recognition

• Recognition criteria is divided into 4 areas:
  • EMS
  • STEMI Referral Hospitals (non PCI)
  • STEMI-Receiving Hospitals (PCI)
  • STEMI Systems
Mission: Lifeline Recognition

Award Categories

BRONZE = 1 Calendar Quarter / 90 consecutive days

SILVER = 4 Calendar Quarters / 12 consecutive months

GOLD = 8 Consecutive Quarters / 24+ consecutive months
Achievement Measures

• Used to evaluate data elements

• No Achievement measures can be lower than 75% in order to qualify for award status

• An overall composite score of 85% is required on all achievement measures to qualify for award status
Timeline:

DATA EVALUATION
- Begins in March of data entered into AR-g from January through December of the previous year.

FORMS NEEDED
- Data Release Consent and ML Registration

NOTIFICATION OF ELIGIBILITY
- Award recipients are notified the Spring.

AWARDS PRESENTATION
- by AHA staff in Summer

AWARD CEREMONY
- at AHA Sessions in November.

US NEWS & WORLD REPORT
- July article

Improving the System of Care for STEMI Patients
STEMI Referral Center Achievement Measures for M:L Recognition

1. Door-to-first ECG time ≤ 10 minutes
2. Reperfusion –eligible patients receiving any reperfusion (PCI or fibrinolysis) therapy
3. Door-to-needle ≤ 30 minutes (reperfusion eligible)
4. Door in to door-out time ≤ 45 minutes (reperfusion eligible)
5. Aspirin ≤ 24 hours of admission

* Facility goal to make first door-to-balloon (first device used) time within 90 minutes (including transport time)
DISCHARGE MEASURES

6. Aspirin at discharge
7. Beta Blocker at discharge
8. Statins or lipid lowering drugs for LDL>100
9. ACEI/ARB for LVSD
10. Smoking cessation counseling
1. Door-to-balloon (first device used) $\leq 90$ minutes, non-transfers

2. First medical contact to balloon inflation (first device used) $\leq 90$ minutes, non-transfers

3. Reperfusion –eligible patients receiving any reperfusion (PCI or fibrinolysis) therapy

4. Aspirin within 24 hours of admission
Discharge Measures

5. Aspirin at discharge
6. Beta Blocker at discharge
7. Statins or lipid lowering drugs for LDL > 100
8. ACEI/ARB for LVSD at discharge
9. Smoking cessation counseling at discharge
Mission: Lifeline Involvement

Accreditation

Recognition

Registration & Participation

Improving the System of Care for STEMI Patients
Accreditation Program

• Collaborative program between the American Heart Association and the Society of Chest Pain Centers.

• Accreditation program for: Mission: Lifeline Referral and Mission: Lifeline Receiving Centers.

• This joint effort to improve STEMI care should launch Summer 2011
Accreditation Program

• Their will be a requirement of Receiving and Referral Centers to maintain at least a Bronze level status for Mission: Lifeline recognition.

• This collaboration will focuses on improvement of process measures.

• Further the goal of AHA by reducing death from cardiac disease
Mission: Lifeline Recommendations for Criteria STEMI Referral Center

- Appropriate protocols and standing orders should be in place for the identification of STEMI. At a minimum, these protocols should be present in the Intensive Care Unit/Coronary Care Unit and Emergency Department (ED).

- Each ED should maintain a standardized reperfusion STEMI care pathway that designates primary PCI as the preferred reperfusion strategy if transfer of patients to a primary PCI hospital/STEMI-Receiving Center can be achieved within times consistent with ACC/AHA guidelines.

- Each ED should maintain a standardized reperfusion STEMI care pathway that designates fibrinolysis in the ED (for eligible patients) when the system cannot achieve times consistent with ACC/AHA guidelines for primary PCI.

- If reperfusion strategy is for primary PCI transfer, a streamlined, standardized protocol for rapid transfer and transport to a STEMI-Receiving Center should be operational.

- If reperfusion strategy is for primary PCI transfer, all patients should be transported to the most appropriate STEMI-Receiving Center where the expected first door-to-balloon (first device used) time should be within 90 minutes (considering ground versus air transport, weather, traffic).

- The STEMI Referral Center should have an ongoing quality improvement process, including data measurement and feedback, for the STEMI population and collect and submit Mission: Lifeline required data elements (using the ACTION Registry – GWTG Limited Form*).

- A program should be in place to track and improve treatment (acutely and at discharge) with ACC/AHA guideline based Class I therapies.

- A multidisciplinary STEMI team, including EMS, should review hospital specific STEMI data on a quarterly basis.
  - Door-to-first ECG time (goal <10 minutes)
  - Proportion of STEMI-eligible patients receiving any reperfusion (PCI or fibrinolysis) therapy.
  - STEMI Referral Center ED door-to-balloon (first device used) time for patients transferred to PCI center
    - STEMI Referral Center ED door to ED discharges
    - STEMI Referral Center ED door-to-balloon (first device used) time within 90 minutes (including transport time)
Protocols for triage, diagnosis and Cardiac Catheterization Laboratory activation should be established within the primary PCI hospital/STEMI-Receiving Center. A single activation phone call should alert the STEMI team. Criteria for EMS activation of the Cardiac Catheterization Laboratory should be established in conjunction with EMS offices.

The STEMI-Receiving Center should be available 24 hours/7 days a week to perform primary PCI.

The Cardiac Catheterization Laboratory staff including interventional cardiologist should arrive within 30 minutes of activation call.

There should be universal acceptance of STEMI patients (no diversion). There should be a plan for triage & treatment for simultaneous presentation of STEMI patients.

Interventional cardiologists should meet ACC/AHA criteria for competence. Interventional cardiologists should perform at least 11 primary PCI procedures per year and 75 total PCI procedures per year.

The STEMI-Receiving Center should meet ACC/AHA criteria for volume and perform a minimum of 36 primary PCI procedures and 200 total PCI procedures annually.

The STEMI-Receiving Center should participate in the Mission: Lifeline-approved data collection tool, ACTION Registry – GWTG.

A program should be in place to track and improve treatment (acutely & at discharge) with ACC/AHA guideline based Class I therapies.

There should be a recognized STEMI-Receiving Center liaison/system coordinator to the system and a recognized physician champion.

There should be monthly multidisciplinary team meetings to evaluate outcomes and quality improvement data. Operational issues should be reviewed, problems identified, and solutions implemented. The following measurements should be evaluated on an ongoing basis:

- Door-to-balloon (first device used) time, non-transfer within 90 minutes
- STEMI Referral Hospital ED door-to-balloon (first device used) time, transfer within 90 minutes
- First Medical contact to balloon inflation (first device used) non-transfer within 90 minutes
- First Medical contact to balloon inflation (first device used) transfer
- Proportion of eligible patients receiving reperfusion therapy
- Proportion of eligible patients administered guideline-based Class I therapies
- Proportion of patients with field diagnosis of STEMI and activation of the Cardiac Catheterization Laboratory for intended primary PCI that do not undergo acute catheterization because of misdiagnosis
- Proportion of patients with field diagnosis of STEMI and activation of the Cardiac Catheterization Laboratory for intended primary PCI that undergo acute catheterization and found to have no elevation in cardiac biomarkers and no revascularization in the first 24 hours
- In hospital mortality
Mission: Lifeline Systems Report

- Report in final development
- Designed as a composite report for all hospitals data within a defined STEMI System
- Will cost approximately $500 depending on size of system. The fee is a one time programming fee per system.
- System can determine if data per site will be blinded or un-blinded.
- Each hospital within the system must sign an agreement/ data consent form that identifies them as a system hospital.
System Name: Q1/10
Critical Process Timelines: Time to Device

FMC to Device (Direct Presentation EMS Only) – Median Time

1st Door to Device (Transfer for PCI Only) – Median Time
System Name: Q1/10
FMC to Device Activation (minutes)
Direct Presentation, Arriving via EMS

<table>
<thead>
<tr>
<th>Time in Minutes</th>
<th>0</th>
<th>15</th>
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<th>15</th>
<th>15</th>
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<td>(N)</td>
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<tr>
<td>FMC-Docor</td>
<td>80</td>
<td>77</td>
<td>75</td>
<td>70</td>
<td>64</td>
<td>87</td>
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<td>87</td>
<td>87</td>
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</tr>
<tr>
<td>Door-Arrival-Cath Lab</td>
<td>47</td>
<td>33</td>
<td>26</td>
<td>27</td>
<td>22</td>
<td>36</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>49</td>
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<tr>
<td>Cath Lab-Device</td>
<td>22</td>
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<tr>
<td>FMC-Device (National)</td>
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Improving the System of Care for STEMI Patients
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