Mission: Lifeline EMS Recognition Guide

This Mission: Lifeline EMS Recognition Guide was developed to provide information about Mission: Lifeline EMS Recognition processes and criteria. If you have any questions, please email Dave Travis at david.travis@heart.org.

GLOSSARY

What is Mission: Lifeline® EMS Recognition?

Mission: Lifeline® Emergency Medical System (EMS) Recognition is the newest platform added to the Mission: Lifeline STEMI recognition program. It seeks to acknowledge the work, training and commitment by EMS agencies and Medical First Responders (MFRs) to improve overall quality of care for the STEMI patient, by directly influencing the STEMI System of Care.

What role does the Emergency Medical System team play in Mission: Lifeline?

Emergency Medical System providers are vital to the overall success of Mission: Lifeline STEMI Systems of Care. MFRs and EMS agencies with education in the assessment and early identification of the STEMI patient, early access to 12 lead ECG machines with implemented protocols derived from ACC/AHA STEMI Guidelines, are agents that are driving significant improvements in the care of STEMI patients. The correct tools and training allow pre-hospital providers to rapidly identify the STEMI, promptly notify the destination center and trigger an early response from the awaiting hospital personnel. Communication and collaboration among pre-hospital and hospital providers is the essence of Mission: Lifeline.

What are the recognition levels that can be awarded and the volume requirements for each?

- **BRONZE:** At least 1 calendar quarter achieving a minimum of 75% compliance for each required measure.
  - **Volume: There must be** at least 2 STEMI patients in one calendar quarter meeting achievement criteria and at least 4 STEMI patients in the calendar year..
- **SILVER:** Aggregated annual score achieving a minimum of 75% compliance for each required measure.
  - **Volume:** at least 8 patients in the 2015 calendar year.
- **GOLD:** 2 consecutive calendar years achieving a Silver award
  - **Volume:** at least 8 STEMI patients in 2015 calendar year + SILVER achievement in 2015.

What are the Mission: Lifeline EMS recognition measures that will be reviewed for compliance?

1. Percentage of patients with non-traumatic chest pain ≥ 35 years old, treated and transported by EMS who received a prehospital 12 lead ECG
2. Percentage of STEMI patients transported to a STEMI Receiving Center, with pre-hospital First Medical Contact (FMC) to Device (PCI) ≤ 90 Minutes
3. Percentage of STEMI patients transported to a STEMI Referring Center, with Arrival (to Referring Center) to Fibrinolytic Therapy administered in ≤ 30 Minutes (Door to Needle)

Agencies are required to submit their data based on transport destination as cited below:

Agencies with STEMI patients transported to STEMI Receiving Centers only	**Reporting Measures #1 and #2 required**
Agencies with STEMI patients transported to STEMI Referring Centers only	**Reporting Measures #1 and #3 required**
Agencies with STEMI patients transported to both STEMI Receiving Centers and STEMI Referring Centers	**Reporting Measures #1, #2, and #3 required**

Mission: Lifeline EMS Measures Explained

Measure 1: Percent of non-traumatic chest pain patients, treated and transported by EMS that are 35 years of age and over that receive a pre-hospital 12 Lead ECG

The pathway to early recognition of a STEMI begins with 12 Lead ECG acquisition. This measure looks at the total number of patients treated AND transported AND with a complaint of non-traumatic chest pain, who received a 12 lead ECG in the field.

early suspicion → early acquisition → early identification → early notification → early intervention

Inclusion Criteria: Patients with non-traumatic chest pain, 35 years of age or over, and transported
Denominator = Total number of patients that meet the above inclusion criteria
Numerator = Total number of patients in the denominator that received a pre-hospital 12 lead ECG

Measure 2: Percentage of STEMI patients transported to a STEMI Receiving Center, with FMC to Device Activation/Primary PCI in ≤ 90 Minutes

Inclusion Criteria: Patients 18 years of age or over, with a STEMI noted on pre-hospital ECG, transported to a STEMI Receiving Center AND Primary PCI was performed
Denominator = Total number of patients that meet the above inclusion criteria
Numerator = Total number of patients in the denominator where the total time from FMC to Device Activation/Primary PCI was achieved in 90 minutes or less

Outlier Volume = Total number of patients included in the denominator volume, where the total time from FMC to Device Activation/Primary PCI was GREATER than 90 minutes. This volume is not used in any of the achievement percentage calculations, but is included in the application so applicants may consider any possible acceptable exclusions that may be applied to this population.

Exclusions: Of the patients reported in the Outlier Volume, can one or more of the following allowable exclusions be applied to the patient(s)?

- Delay caused by patient or family providing consent for treatment and/or transport (prehospital/in-hospital)
- Delay caused by patient experiencing cardiac arrest and/or the need for intubation (prehospital/in-hospital)
- Delay caused by difficulty in accessing femoral or radial artery (in the cath lab)
- Delay caused by difficulty in crossing the coronary lesion (in the cath lab)

Exclusion Tips:

- In reporting exclusions, only report one exclusion per patient, not the total number of exclusions applied to the patient if they have more than one exclusion.
- Exclusions must be documented in the patient record.
- Exclusion event may have occurred at any time between FMC and device activation.
- Communication and follow up with the receiving center must be made in order to identify if an allowable exclusion occurred in the cath lab.

Applying the exclusions: When a volume of patients experiencing one or more of the allowable exclusions is reported, that exclusion volume is subtracted from the original denominator. The adjusted denominator will automatically be used in the achievement percentage calculation.

$$\text{Achievement \%} = \frac{\text{Numerator}}{\text{Adjusted Denominator}} \times 100$$

Measure 3: Percentage of STEMI patients transported to a STEMI Referring Center, with Arrival (to STEMI Referring Center) to Fibrinolytic Administration in ≤ 30 minutes.

The pathway to early reperfusion of the STEMI patient begins with early 12 Lead ECG acquisition. This measure looks at the STEMI patients transported by the EMS agency to the STEMI referring center and the percentage of those of who received lytic therapy within the recommended time of 30 minutes or less. Pre-hospital providers directly impact achieving this goal. Early suspicion of a possible STEMI patient → early acquisition of the 12 lead ECG → early notification to the referring center → timely lytic administration.

Inclusion Criteria: Patients 18 years of age or over, with a STEMI noted on pre-hospital ECG, transported to a STEMI Referral Center AND Fibrinolytic Therapy was administered
Denominator = Total number of patients that meet the above inclusion criteria
Numerator= Total number of patients in the denominator where the total time from arrival to the STEMI Referring Center and the time of Fibrinolytic Therapy Administration was achieved in 30 minutes or less

Outlier Volume = Total number of patients included in the denominator volume, where the total time from arrival to the STEMI Referral Center and the time of Fibrinolytic Therapy Administration was GREATER than 30 minutes. This volume is not used in any of the achievement percentage calculations, but is included in the application so applicants may consider any possible acceptable exclusions that may be applied to this population.

Exclusions: Of the patients reported in the Outlier Volume, can one or more of the following allowable exclusions be applied to the patient(s)?

- Delay caused by patient or family providing consent for treatment and/or transport (prehospital/in hospital)
- Delay caused by patient experiencing cardiac arrest and/or the need for intubation (prehospital/in hospital)

Exclusion Tips:

- In reporting exclusions, only report one exclusion per patient, not the number of exclusions applied to the patient if there are more than one.
- Exclusions must be documented in the patient record.
- Exclusion event may have occurred at any time between FMC and Arrival to the Referral Center

Applying the exclusions: When a volume of patients experiencing one or more of the allowable exclusions is reported, that exclusion volume is subtracted from the original denominator. The adjusted denominator will automatically be used in the achievement percentage calculation.

$$\text{Achievement \%} = \frac{\text{Numerator}}{\text{Adjusted Denominator}} \times 100$$

Optional Reporting Measures for 2016

These are additional measures which are not required for EMS recognition 2016, but which the Mission Lifeline team will begin to collect data on. Reporting of these measures is optional. Agencies are asked to report on these measures if the information is available. If data is only available on one or two of these measures, agencies are encouraged to report what they are able to. These measures are:

- What percentage of your agency's 12 lead ECGs are performed on patients with non-traumatic chest pain ≥ 35 years, within 10 minutes of First Medical Contact (FMC)?
- Within what timeframe are 75% of hospital notifications performed after the first STEMI positive EMS 12 lead ECG? (75^{th} percentile)
  Example: 75% of hospital notifications are performed within **xxx minutes** of the first STEMI positive 12 lead ECG.

- Percentage of over-call and percentage of under-call of STEMI activations:
    a. **Over-Call Rate**
        i. **Denominator:**
            1. Inclusion Criteria
                a. Patient arrival at initial hospital was via ambulance, **and**
                b. Initial hospital destination was a STEMI receiving center, **and**
                c. STEMI activation was requested by EMS prior to hospital arrival
            2. Exclusion Criteria
                a. Patient experienced a cardiac arrest at any time prior to, or within one hour of, hospital arrival, **or**
                b. Refusal of care/Unable gain consent for cardiac cath, **or**
                c. Patient has DNR status
        ii. **Numerator:**
            1. Inclusion Criteria
                a. Patient is included in the denominator, **and**
                b. Patient did not receive a cardiac catheterization
            2. Exclusion Criteria
                a. None
    b. **Under-Call Rate**
        i. **Denominator:**
            1. Inclusion Criteria
                a. Patient arrival at initial hospital was via ambulance, **and**
                b. Initial hospital destination was a STEMI receiving center, **and**
                c. Patient required an immediate cardiac cath
            2. Exclusion Criteria (if one or more at met, case is excluded)
                a. Patient had prehospital 12 lead ECG without indication of ST Elevation on electrocardiogram
                b. Patient experienced a cardiac arrest at any time prior to, or within one hour of, hospital arrival
                c. Refusal of care/unable gain consent for cardiac cath / PCI
                d. DNR status
        ii. **Numerator:**
            1. Inclusion Criteria
                a. No prehospital notification of STEMI was made prior to patient arrival
            2. Exclusion Criteria
                a. None

What application options are available for 2016?

1. Individual Application (Stand Alone)
    a. Ambulance Service meets the volume requirement, acquires the 12 Lead ECG **AND** provides transport of the STEMI patient.
2. Individual Application with Team option
    a. Ambulance service is the "primary applicant".
    b. The ambulance service opts to include and list the Medical Frist Responder (MFR) agencies/departments that assist with calls that involve a possible STEMI patient, regardless of the assisting department's ability to acquire a 12 Lead ECG, the level of certification or the MFR's ability to transport.
    c. The ambulance service meets the volume requirement, has the capability to acquire the 12 Lead ECG **AND** provides transport of the STEMI patient.
    d. Application asks for the primary applicant to provide contact information for their ambulance service as well as minimal contact information for each Medical First Responder included as a team member.
3. Joint Application
    a. The joint application is for the pre-hospital providers that provide treatment and transport of the STEMI patient in collaboration with a second agency. One agency may acquire the 12 Lead ECG and the second agency provides the transport. There are numerous possibilities for the Joint application option.
    b. The pre-hospital providers meet the volume requirement with patients that are treated together
    c. One of the two joint applicants must meet the %ECG criteria on all patients, 35 years or older, with non-traumatic chest pain
    d. If an agency meets the volume criteria with 2 or more partnering agencies one joint application may be submitted for each combination when each one meets the volume requirement.
    e. If an agency meets the volume criteria with a partnering agency AND meets an additional volume criteria as an individual applicant, the agency may apply via both options. (With respect to volume, a STEMI patient can only fall into one application)

What data should be collected to prepare for the recognition application?

Pre-hospital data and follow up data from the destination centers is required for Mission: Lifeline® EMS Recognition application submission. The following data elements are necessary to be collected by each agency:

EMS Data

- Number of patients 35 years or over with non-traumatic chest pain that received a 12 lead ECG **AND** who were transported.

- Time of **First Medical Contact**. First Medical Contact (FMC) is broadly defined as the time of eye to eye contact between STEMI patient and caregiver. For the purposes of Mission: Lifeline EMS Recognition - First Medical Contact (FMC) is the time of eye to eye contact between STEMI patient and the first caregiver. (Medical First Responder, Physician at a clinic, or EMS personnel). When the Medical First Responder or physician at a clinic is the first caregiver at the patient's side, and their time of initial contact with the patient is known, the eye to eye contact time between the patient and that first caregiver is preferred. For the patient to be included in the Mission: Lifeline EMS Recognition program, there must have been a prehospital 12 lead, but not necessarily performed by the first caregiver.
- STEMI patients who experience at least one allowable delay as documented as occurring in the field

Follow Up with the Hospitals

- Time of fibrinolytic administration (patients transported to a STEMI Referring Center)
- Time of device activation/Primary PCI (Patients transported to a STEMI Receiving Center)
- STEMI patients that experience at least one allowable delay documented as occurring in the Emergency Department or the cath lab

Suggested Pre-hospital Data to routinely collect and review:

- Sign and Symptom Onset to 911 Call
- 911 Call to Ambulance Dispatch
- Ambulance Dispatch – Ambulance en route
- Ambulance en route – Ambulance arrival
- Ambulance arrival – FMC
- FMC to 12 Lead ECG Acquisition
- 12 Lead ECG Acquisition to Hospital Notification
- Hospital Notification – Hospital Arrival

How does the pre-hospital provider connect with the destination hospital to collect follow-up data?

The **FMC to Device Activation/Primary PCI ≤90 minutes** and **Arrival at Referring Center to Fibrinolytic Administration ≤ 30 minutes** measures require follow up with the destination hospitals. Many hospitals are collecting robust data specific to the STEMI population and are engaging a multidisciplinary team to identify process improvements and successes. More EMS agencies than ever are active members of the destination centers' multidisciplinary teams. If there is interest in participating with such a multidisciplinary team, contact the hospital's STEMI and/or outreach coordinator to learn how to become involved with this effort.

EMS agencies request/accomplish receiving follow up on the STEMI patients at three different periods once the patient is delivered to the destination center.

- Immediate feedback – The ED physician and/or cardiologist may be able to provide immediate feedback to the ambulance crew upon arrival after reviewing the pre-hospital 12 lead ECG and seeing the patient
- 24/48 hours feedback – The ACC/AHA Guidelines suggest the destination hospital provide feedback to EMS agencies within 24-48 hours of the patient's arrival to the facility.
- Monthly/Quarterly – Another form of feedback is participation in monthly/quarterly multidisciplinary STEMI review committee meetings.

The Mission: Lifeline Hospital Recognition Program relies on data collected from STEMI Receiving and Referring Centers through their participation in the largest national AMI data registry, ACTION Registry®-GWTG™.

Organizing the Data Summary for Mission: Lifeline EMS Recognition Application Submission

EMS agencies are advised to collect and organize data prior to beginning the online recognition application. Each agency should become familiar with the data elements that pertain to the Mission: Lifeline EMS recognition criteria and develop a system to engage the medical first responders, any co-applicants and the destination hospitals in follow up. The American Heart Association has tools available to aid in data collection and in the follow up process with the destination hospitals. These tools will help agencies prepare for the actual web-based application submission.

The tools are will be available via the following link: www.heart.org/emsrecognition.

- EMS/Hospital Data Worksheet
- Pre-Application Workbook: PDF versions of the actual online application
- Mission Lifeline EMS Recognition Criteria
- Mission: Lifeline EMS Recognition Glossary

Completing the Mission: Lifeline EMS Recognition Application

- The data submission period is **January 1 to March 31, 2016**
- Data is submitted by completing the online Mission: Lifeline EMS Recognition Application

Mission: Lifeline EMS Recognition Announcement

Ambulance agencies achieving 2015 Mission: Lifeline EMS Recognition will be notified of the achievement no later than June 1 2016. The notifications will be made directly by AHA staff and made to the point of contact for the EMS agency(ies) identified in the application. (EMS agencies that complete the team option will be responsible for notifying all team member medical first responding agencies/departments that are included in the application.)

Mission: Lifeline EMS Recognition Glossary of Terms

Mission: Lifeline®: The American Heart Association's national initiative to advance the systems of care for patients with ST segment elevation myocardial infarction (STEMI) and Out of Hospital Cardiac Arrest. The overarching goal of the initiative is to reduce mortality and morbidity for the STEMI and/or Out of Hospital Cardiac Arrest patients and to improve the overall quality of care. For more information: www.heart.org/missionlifeline **AHA Circulations to support STEMI Systems of Care**:

2007 The Emergency Services and Emergency Department Perspective
2007 The Primary PCI Perspective
2009 Focused Update: ACC/AHA STEMI Guideline Update
2012 A Report From the AHA's Mission: Lifeline
2011 ACCF/AHA/SCAI PCI Guidelines
2013 ACC/AHA Guidelines for Management of Patients with STEMI

Quality: The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.

Healthcare Quality Improvement: The process of maintaining what is good about the existing health care system while focusing on the areas that need improvement. Improving the quality of care and reducing medical errors are top priorities.

Healthcare Process Improvement: A group of healthcare professionals coming together (Multidisciplinary team) to identify a process goal, identify the steps needed to create change, identify how the team will know when the change becomes an improvement through implementation of the Plan, Do , Study, Act (PDSA) cycle.

Multidisciplinary Team: Diverse group of healthcare professionals, such as ED physicians, cardiologists, nurses, cath lab, ED and radiology leadership, pharmacists, dieticians, health educators, administration and may include EMS leadership, collaborating in an effort to provide effective and efficient care to patients.

Numerator: Part of a fraction above the line, it is the number of occurrences (the count) of an item, element or selection that meet the criteria.

Denominator: Part of a fraction below the line, it is the total number of treatment opportunities among all eligible patients.

Inclusion Criteria: A set of conditions that must be met in order for the patient record to be incorporated in a specific measure.

Exclusion Criteria: A set of standards used to determine whether a patient record is not included in a specific measure.

Destination Hospital: The Hospital the patient was transported to. This will either be a STEMI Receiving Center or a STEMI Referral Center.

Ambulance Agency: For EMS recognition, an EMS Agency is defined as personnel who respond to the medical emergency in an official capacity as a part of an organized medical response AND are designated to treat and transport the patient to the hospital

EMS Agency: For EMS recognition, an EMS Agency is defined as personnel who respond to the medical emergency in an official capacity as a part of an organized medical response AND are designated to treat and/or transport the patient to the hospital.

EMS Agency ID: For Mission: Lifeline EMS Recognition, the EMS Agency ID is the state-assigned provider number for the Emergency Medical Service responding (transporting) agency. Only ONE recognition application submission per State ID number is allowed.

Data Summary/ EMS Recognition Application Submission: Official submission for the summary of data based on the Mission: Lifeline EMS Recognition Criteria. This is a web-based process; no individual patient level data is requested or required.

Application Submission Period: The period of time, beginning January 1, 2016, through the Data Submission Deadline, March 31, 2016, where the data summary submission form will be open for Ambulance agencies to submit the data summaries required for MISSION: LIFELINE EMS Recognition.

Application Submission Deadline: The absolute latest Date/Time the recognition application can occur to be eligible for Mission: Lifeline EMS recognition review. (23:59.59 EST March 31, 2016 for 2016 awards)

Data/Application Review Period: The period of time after the application submission deadline through May 15, 2016, when the recognition applications will be reviewed by AHA National Center Mission: Lifeline staff, for recognition achievement.

STEMI (ST Elevated Myocardial Infarction): A Myocardial infarction where a 12 Lead ECG shows ST-segment elevation, usually associated with a recently closed coronary artery. Patients suffering this type of myocardial infarction are more likely to survive if their coronary artery is opened within 12 hours of onset.

Pre-Hospital 12 Lead ECG: A recorded tracing of the electrical activity of the heart using a 12 Lead ECG monitor in the pre-hospital environment.

Reperfusion: The restoration of blood flow to an organ or tissue that has had its blood supply cut off, as after a myocardial infarction.

PCI (Percutaneous Coronary Intervention): A procedure used to open or widen narrowed or blocked blood vessels supplying the heart. Usually, the blood vessels are accessed through the skin over the leg (femoral) or arm (radial or brachial) arteries. A thin catheter is advanced over a soft-tipped guide-wire through the arterial tree to the base of the heart where the coronary arteries arise. A smaller guide-wire is then advanced into the coronary artery and across the blockage, followed by balloon-dilation catheters, stents, and other artery opening devices as needed. This includes balloon angioplasty (PTCA), stenting, rotational athrectomy, or laser intervention.

Device Activation Time: A data element field in the ACTION Registry-GWTG forms. First Device Activation can be documented as

- Time of first balloon inflation
- If no balloon was inflated, the documented time the first stent was deployed
- The time of the first treatment of lesion (thrombectomy aspiration device, laser, rotational athrectomy).

Fibrinolysis: The breakdown of fibrin, usually by the enzymatic action of plasmin. Fibrin is a protein necessary for blood clotting that forms a web-like mesh that traps red blood cells and platelets thus holds clots together. In the case of myocardial infarction, the administration of drugs that facilitate fibrin breakdown is referred to as "fibrinolysis."

Fibrinolytic: An agent used to facilitate fibrin breakdown.

Fibrinolytic Administration Time: Time the destination hospital administers either the first bolus of a fibrinolytic or the beginning of the thrombolytic infusion. (May reference Seq3 8023 in ACTION Registry-GWTG Data entry)

FMC (First Medical Contact): This Mission: Lifeline EMS recognition measure utilizes the time of pre-hospital "First Medical Contact". First Medical Contact (FMC) is broadly defined as the time of eye to eye contact between STEMI patient and caregiver. For the purposes of Mission: Lifeline EMS Recognition - First Medical Contact (FMC) is the time of eye to eye contact between STEMI patient and the first caregiver. (Medical First Responder, Physician at a clinic, or EMS personnel). When the Medical First Responder or physician at a clinic is the first caregiver at the patient's side, and their time of initial contact with the patient is known, the eye to eye contact time between the patient and that first caregiver is preferred. For the patient to be included in the Mission: Lifeline EMS Recognition program, there must have been a prehospital 12 lead performed, but not necessarily by the first caregiver.

FMC (First Medical Contact) to Device Activation/Primary PCI: The time elapsed from the first medical contact to the first inflation of the PCI balloon or first device activation.

Arrival (to referring center) to Fibrinolytic Administration: The time elapsed from emergency department registration arrival to the initial infusion of fibrinolytic medication.

FMC to PCI Device Activation/Primary PCI equal to or < 90 Minutes Numerator: Of the number of patients identified in the denominator the number of patients that were transported directly to a STEMI Receiving Center from the field, and have a documented STEMI via pre-hospital ECG and meet Time of FMC to reperfusion < 90 Minutes, where Primary PCI was performed.

FMC to Device Activation/Primary PCI equal to or <90 Minutes Denominator: The total number of patients transported directly to the STEMI Receiving Center who had a STEMI noted on a prehospital 12 lead ECG and who had a Primary PCI performed (after allowable exclusions are applied) within 90 minutes.

Arrival (to referring center) to Fibrinolytic Administration equal to or <30 Minutes Numerator: Of the number of patients identified in the denominator, the number of patients who are transported to a STEMI Referring Center from the field, and have a documented STEMI via pre-hospital 12 lead ECG and met time of arrival to fibrinolytic therapy administration < 30 Minutes.

Arrival (to referring center) to Fibrinolytic Administration equal to or <30 Minutes Denominator: The total number of patients transported to the STEMI Referring Center, and have a STEMI noted on a pre-hospital 12 lead ECG, where Fibrinolytic therapy was administered, after allowable exclusions are applied.

Percent Patients 35 years of age or over who receive 12 Lead ECG Denominator: The total number of (EMS) pre-hospital patients, over 35 years of age, with a complaint of non-traumatic chest pain who are transported.

Percent Patients 35years of age or over who receive 12 Lead ECG Numerator: The number of (EMS) pre-hospital patients over 35 years of age, with a complaint of non-traumatic chest pain who were transported and had a 12 lead ECG performed.

Difficult Access (Delay): Documented in the inpatient medical record, this is a delay due to difficulty in femoral or radial arterial access needed to perform the PCI procedure.

Consent (Delay): Documented in the pre-hospital and/or inpatient medical record, this is a delay due to the patient or family not giving immediate consent for PCI treatment.

Arrest Intubation (Delay): Documented in the pre-hospital and/or inpatient medical record, this is due to the need for emergent intubation and/or cardiac arrest care that occurs between the time of FMC and Primary PCI.

Difficult Lesion (Delay): Documented in the inpatient medical record, this is a delay that is due to difficulty in crossing the identified lesion.

ACTION Registry®-GWTG™: ACTION Registry®-GWTG™ is risk-adjusted, outcomes-based, quality improvement program that focuses exclusively on high-risk STEMI/NSTEMI patients. It helps hospitals apply

ACC/AHA Clinical Guidelines recommendations in their facilities, and provides invaluable tools to assist them in achieving their goal of quality improvement. Participating in this program helps hospitals improve their adherence to ACC/AHA Clinical Guidelines recommendations as they satisfy the data collection and reporting requirement of regulatory and contracting organizations. The registry's real-time quarterly reports will support efforts to reduce procedural complications, identify areas of excellence and opportunities for improvement, and document the results of QI efforts. For more information go to www.NCDR.com.