GWTG Coronary Artery Disease (CAD) Past, Present, and Future
ND Mission
Lifeline STEMI & NSTEMI Awards
Mindy Cook BSN
Senior Director Quality and System Improvement MN, ND, WI
American Heart Association, Midwest Affiliate

FINANCIAL DISCLOSURE:
No relevant financial relationship exists
Heart Disease and Stroke Statistics—2017 Update

• When considered separately from other CVDs, stroke ranks No. 5 among all causes of death, behind diseases of the heart, cancer, chronic lower respiratory disease, and unintentional injuries/accidents.

• Globally, in 2013 there were 6.5 million stroke deaths, making stroke the second-leading cause of death behind ischemic heart disease.

• Approximately 795,000 strokes occur in the United States each year. On average, every 40 seconds, someone in the United States has a stroke, and on average, every 4 minutes, someone dies of a stroke.

• Approximately 60% of stroke deaths occurred outside of an acute care hospital.
• Approximately every 40 seconds, an American will have an MI (AHA computation).

• On the basis of data from the ARIC study of the NHLBI: This year, ≈695,000 Americans will have a new coronary event (defined as first hospitalized MI or CA recurrent event.

• It is estimated that an additional 165,000 silent MIs occur each year. That assumes that ≈21% of the 790,000 first and recurrent MIs are silent.

• The estimated annual incidence of MI is 580,000 new attacks and 210,000 recurrent attacks.

• Average age at first MI is 65.3 years for males and 71.8 years for females.
Pre-Hospital EMS Acquired 12 Lead ECG

ND Urban Baseline: 73% 2016: 90%
ND Rural Baseline: 22% 2016: 64%
First Medical Contact to Reperfusion by Primary Percutaneous Coronary Intervention

![Chart showing median time from first medical contact to primary PCI for Transfer-In and Overall, with data from 2012 to 2016.](chart.png)
ST Elevation Myocardial Infarction (STEMI) Mortality Rate Trends

- ND In-hospital Mortality Unadjusted Observed Mortality Rate
- National In-hospital Mortality Unadjusted Observed Mortality Rate

Background

Council: Lifeline is a strategic initiative to save lives and reduce disability by improving emergency readiness and response to heart attack patients. Heart disease is the number one killer in North Dakota and nationally. North Dakota consists of 53 counties over 68,001 square miles with a population of 680,000. Thirty-four entire counties are designated medically underserved areas and 13 counties have some part of them designated medically underserved. A large number of residents reside in the 36 tracts counties 21% (42,809/680,000) with a population density of < 5 people/mile, and 9 rural counties 15% (102,000 of 680,000) < 500 residents. Population density of > 6 miles together making up just over one third of the state population and 85% (45 of 53) of the physical territory. Eight urban counties with a city of at least 15,000 make up the remaining population at 63% (426,400 of 680,000). In 2011, ND ML received a $7.1 million grant to bridge gaps in disparities in access to care by streamlining statewide STEMI systems.

Methods

A statewide initiative was implemented for pre-hospital recognition, education, triage, and treatment of STEMI patients to the most appropriate reperfusion strategy. Ninety-eight percent (123 of 125) licensed around EMS received funding to enable pre-hospital 12 lead ECG acquisition and transmission to both referral and receiving hospitals in person facilitated education were provided to each EMS agency in 3 rounds with focus on acquisition, recognition and imaging of STEMI patients utilizing the ACC/AHA guidelines. PCI receiving hospital physician and nurse educator teams facilitated a standarization in person clinical STEMI education sessions at each of the 38 referring hospitals on utilizing a state recommended referring STEMI protocol, EMS transport guideline, and a STEMI feedback process. Six of six PCI receiving hospitals collected data utilizing the ACTION GWTG Registry

Results

In ND, aggregate data from Q3 2012 to Q3 2013, there have been marked improvements in several measures. The ND Mission: Lifeline composite score increased from 93% (57/596) to 97% (471/482). This score measures adherence to 3 performance measures. Percentage of direct admit STEMI patients (Non EMS Arrival) with Door-to-device time < 90 minutes, non transfer, direct admit STEMI patients (arrival via EMS – Ambulance Only) with FMC-to-device time < 90 minutes, repertusion eligible patients receiving any reperfusion therapy (PCI or fibrinolysis). STEMI patients receiving aspirin within 24 hours of hospital arrival, STEMI patients on aspirin at discharge, STEMI patients on beta blocker at discharge, STEMI patients with LDL-100 who receive statins or lipid lowering drugs, STEMI patients with left ventricular systolic dysfunction on ACE/ARB at discharge STEMI patients that smoke with smoking cessation counseling at discharge. STECG obtained Pre-Hospital started at 46% (56/122) to 76% (82/121). ED Arrival to First In-Hospital ECG within 10 minutes increased from 66% (61/122) to 84% (103/122). Annual to Primary PCI<30 minutes improved from 86% (32/37) to 100% (43/43).

Conclusions

To sustain STEMI system of care for patients in ND, collaboration with regional partners, care standardization, aggregate data sharing and feedback have been identified as vital. Regional champions committed to systemization are central to EMS and referral hospital engagement and state level process improvement. PCI receiving hospitals lead the way in convening regional multidisciplinary teams meetings, and facilitating data feedback on STEMI systems at a state level to support a unified platform of sustainability.

Limitations

Data was collected from ACTION Registry: GWTG™, which is the registry used by all PCI capable hospitals in ND. The results captured included patients that have presented directly to a PCI hospital via EMS or privately. Transfers from other acute facilities are not included in this data.
Improving Rural STEMI Care through Multi-State Sharing and Collaboration

Jeffrey Sather, MD Trinity Health, Tomasz Styte, MD Sanford Health, Richard Mullvain, RPh, BCPS Essenita Health, Gary Myers, MS, NREMT, Mindy Cook, RN, BSN, Pam Moe, RN, CPHQ, Michelle Gardner, MBA, American Heart Association, Midwest Affiliate

Background

Several factors can impede the timely delivery of optimal care to STEMI patients, particularly in rural states such as South Dakota, North Dakota, and Minnesota. South Dakota has 66 counties covering nearly 76,000 square miles. Five of the seven percent population access coronary intervention (PCI)-capable facilities are located in two communities and travel distances between hospitals can exceed 200 miles. North Dakota consists of 53 counties over 69,001 square miles. Thirty-four percent of the state is designated medically underserved areas and 13 counties have some portion designated medically underserved. Similar distances issues between referring hospitals and PCI-capable facilities are also seen in the majority of the state of Minnesota. These rural areas are heavily dependent upon volunteer ambulance services and the capabilities of the small referring (non-PCI or CAH) hospitals to receive the STEMI patient and transfer in a timely manner. Excluding the Twin Cities and Rochester, there are a total of 18 PCI-capable hospitals throughout rural Minnesota, South Dakota, and North Dakota. Only two of these hospitals are Chest Pain Accredited, with one having Mission Lifeline® Accreditation. There are 153 Critical Access Hospitals in this region, making them crucial to a STEMI system of care.

Methods

Mission: Lifeline® is a strategic initiative to save lives and reduce disability by improving emergency readiness and response to heart attack patients. With funding support, the American Heart Association, hospital, EMS, and state stakeholders have worked together to improve each component of STEMI systems, including across state borders. The South Dakota project started in 2010 followed by North Dakota in 2011. Minnesota was launched in 2013. In each state, STEMI task forces and provider-specific sub-committees were formed. Each PCI-capable hospital was asked to participate in data collection through ACTION Registry®–GWGT™. EMS agencies in North Dakota and South Dakota were granted funds to purchase 12-lead monitors/diagnostic equipment. Minnesota is currently in the process of allocating these devices, based on funding availability. Critical Access Hospital and other non-PCI-capable facilities participated in STEMI education which included ways to improve time critical processes and transfer protocols. An education plan was delivered to all coordinates of the state, and this plan is being adjusted to meet the needs in Minnesota.

Results

A statewide STEMI protocol was adopted in 2012 in North Dakota. South Dakota used this to create their own guidelines which was adopted in 2013. Both protocols will be shared with the Minnesota task force in 2014 by the South Dakota and North Dakota physician champions. The number of 12-lead ECG transmissions have more than tripled in South Dakota since the start of the project. In addition the time from First Medical Contact (FMC) to PCI was 77 minutes in South Dakota from Q4 2012-Q3 2013 beating the national average of 82 minutes. North Dakota is also beating the national average with a FMC to PCI time of 81 minutes during that same timeframe.

Conclusions

Although each state is very different, rural areas often have many of the same barriers for an effective state STEMI system. As the projects have moved forward, each state has approached each component a little differently and adjusted based on needs. The learning experience across state borders has been effective way to make progress. The hospital data and 12-lead ECG transmission increase has proven that there is better STEMI system awareness and cooperation throughout the state resulting in a faster time from first medical contact to device. The collaboration of EMS and hospitals around state borders will also help with the sustainability of the projects and most importantly, the ability for better outcomes for STEMI patients, regardless of their location.

Limitations

Data was collected from ACTION Registry®–GWGT™, which is the registry used by all PCI-capable hospitals in SD, MN and ND. The first medical contact results captures patients that have presented directly to a PCI hospital via EMS or by walk-in. Transfers from other acute care facilities are not included in this data. The ECG Transmissions were provided by LifeNet and includes the majority of transmissions.
Comparing Time to Percutaneous Coronary Intervention in Rural States: Arriving via Ambulance vs Personally Owned Vehicle

John Gallagher MD, Wmoma Health, Jeffrey Salter, MD Trinity Health, Tomasz Styba, MD, Sanford Health, Mindy Cook, BSN, Gary Myers, MS, Pam Mow, RN, Michelle Schmiedt, MBA, American Heart Association

Background
Minnesota, North Dakota and South Dakota continue to build the infrastructure to improve the system of care for patients experiencing a ST-elevation myocardial infarction (STEMI). Time from symptom onset to Percutaneous Coronary Intervention (PCI) is a critical component for better patient outcomes. EMS agencies are critical to the success of an effective STEM system of care. However, about 52% of STEMI patients in these states are arriving by self-transport or personally operated vehicles instead of activating the system via 911. Ideally, the catheterization lab team would be notified by EMS personnel in the field or by emergency physicians after receiving the transmitted ECG indicating a STEMI and reducing the time to PCI.

Methods
There were 774 STEMI patients were entered into ACTION Registry-GWYG from Quarter 3 2013 to Quarter 2 2014. The data included STEMI patients from 18 hospitals in Minnesota, North Dakota and South Dakota participating in Mission: Lifeline, an American Heart Association initiative to improve STEMI systems. The patients analyzed arrived directly to a PCI capable hospital. While the mode of arrival to first facility percentage comparison includes all patients, the time comparison does not include patients that were transferred from a PCI-referring hospital.

Results
The median time from patient arrival at PCI center to catheterization lab arrival ranged between 22 and 31 minutes with a mean of 28 minutes for patients arriving via EMS. Patients that came by personally owned vehicle had a median time from arrival to catheterization lab that ranged between 35 and 41 minutes with a mean of 38 minutes. The median time from hospital arrival to PCI had a mean of 42 minutes for patients arriving via EMS compared to those arriving via self-transport at 57 minutes.

<table>
<thead>
<tr>
<th>Median Time Arrival to PCI (in min)</th>
<th>SD</th>
<th>MN</th>
<th>ND</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Medical Services</td>
<td>47</td>
<td>38</td>
<td>39.5</td>
<td>41.5</td>
</tr>
<tr>
<td>Personally Owned Vehicle</td>
<td>59</td>
<td>56</td>
<td>54.5</td>
<td>56.5</td>
</tr>
</tbody>
</table>

Conclusions
Although extensive system development and 12-lead placement has occurred in the three-state region, creating robust statewide STEMI systems of care, a large number of patients continue to understand these systems by not activating EMS as an entry point. We show that use of EMS results in a decreased time from hospital arrival to PCI compared to presentation by POV. Furthermore, since time from hospital arrival to PCI is a subset of total ischemic time, failure to utilize EMS in the setting of STEMI may increase total ischemic time.
Rural Systems of Care: Real World Observations and Trends in STEMI Patient Characteristics and Correlations of Arrival Mode to Outcomes

A Report from the NCDR® ACTION Registry-GWTG®

INTRODUCTION

Minnesota, North Dakota, and South Dakota have been enhancing statewide systems through infrastructure and clinical education regarding STEMI (ST-elevation myocardial infarction) since 2010 in an attempt to equalize access to timely reperfusion in rural areas. A trend in favor of reperfusion has been observed for STEMI patients who transfer directly to Percutaneous Coronary Intervention (PCI) capable facilities via Emergency Medical Services (EMS) and receive a pre-hospital PCI eligible ECG in comparison to those who present to a non-PCI capable facility. This improved trend to STEMI recognition and reperfusion may be associated with improved outcomes.

METHODS

Data was collected via ACTION Registry-GWTG® from 2012-2015. The cohort was defined as STEMI patients who received PCI with a transfer from a non-PCI eligible facility (n=101) and without PCI (n=376) and who received a pre-hospital PCI eligible ECG (n=1078) and do not (n=308). The association between mode of transport, time to PCI, and outcomes including LV function, in-hospital clinical events, and in-hospital mortality were analyzed using unadjusted association. Multivariable adjustment was performed using covariates from the previously developed and validated ACTION mortality model to determine the independent association between arrival mode and outcomes.

RESULTS

The direct transfer group demonstrated shorter cumulative times (79 vs. 145 min., p<0.001) to coronary reperfusion as compared to the interfacility transfer group. The prehospital STEMI ECG group experienced a shorter time to transfer (40 vs. 55 min., p=0.001) to a PCI center consistent with earlier system recognition and activation for a STEMI event. The direct transfer and prehospital ECG groups had a statistically significant less risk of in-hospital cardiogenic shock, congestive heart failure, cardiac arrest and death as a composite end-point, p<0.001 respectively. During the years of 2012 to 2015, the performance of pre-hospital ECGs has increased.

SUMMARY OF CONCLUSIONS

Implementation of Mission Lifeline programming was associated with significantly lower risk of in-hospital shock, congestive heart failure, cardiac arrest and death in STEMI patients presenting via EMS through increased utilization of pre-hospital ECG, education, and hospital triage and procedural PCI streamlining. Care of the rural STEMI patient presents unique systemic challenges in prompt diagnosis and subsequent transportation of the patient to a facility to either receive primary PCI or thrombolysis potentially leading to prolonged ischemic times and worse clinical outcomes as compared to the urban STEMI patient. As demonstrated in this analysis, Implementation of Mission Lifeline programming in these three states lead to increased utilization of pre-hospital ECG, earlier PCI recognition and EMS direct transport to a STEMI receiving center that was associated with significantly lower risk of in-hospital shock, congestive heart failure, cardiac arrest and death in STEMI patients who called 911 and present via EMS.

For more information go to CVQuality.CCC.org/NCDR or email ncdrresearch@ncdr.org.
ND CARDIC TF BEYOND THE GRANT

Non-ST-Elevation Acute Coronary Syndrome Guideline

Diagnostic Criteria
- New >0.5 mm ST segment depression or new >2 mm anterior T-wave inversion and/or positive biomarkers
- If patient experiences persistent or worsening symptoms obtain serial ECGs at 15-30 minute intervals to monitor for new onset ST-elevation

Standard orders and labs
- Access vital signs stat, repeat every 15 minutes
- Continuous cardiac monitoring (electrocardiogram)
- Insert 1-2 large bore peripheral (arterial and/or venous)
- Obtain following labs: CBC, BMP, PT/INR, PTT, Troponin 1 at 3 and 6 hours (if stay is extended)
- Oxygen at 2 LPM if SpO2<90%, Nitrate to maintain SpO2 90-94%

Standard Medications
- Aspirin 324 mg (chewable non-enteric coated 81 mg q v) orally stat 1 or if patient is unable to swallow give: Aspirin 300 mg rectally
- Ticagrelor (Briniva) 180 mg orally stat 1 OR Clopidogrel (Plavix) 325 mg orally stat 1 (do not give both Ticagrelor and Clopidogrel)
- *Discuss with accepting provider prior to administration
- Heptain 60 units/kg IV bolus (max bolus 4000 units)
- Heparin IV drip 16 units/kg/hr (max 1000 units/hr)

ACCD/AHA Guideline Based Treatment

Optional Labs
- BNP, HCO

Optional Medications
- Nitroglycerine 0.4 mg SL every 5 minutes x 3 as needed for chest discomfort
- Nitroglycerine IV continuous infusion as needed for chest pain
- * Hold nitro if recent phosphodiesterase inhibitor, 24 h of sildenafil or vardenafil, or within 48 h of tadalafil
- Morphine IV or Analgesics of choice as needed for chest pain
- Ondansetron (Zofran) 4 mg IV as needed for nausea/vomiting x 1
- Metoprolol (Lopressor) 25 mg orally x 1

**Hold Beta Blocker if Signs of Heart Failure or shock, DDx less than 1/10, Heart rate less than 60 bpm or Heart Block, Severe Asthma or Reactive Airway Disease

Cardiac Ready Status
- Cardiac Ready
- Letter of intent

North Dakota Counties

Cardiac Ready Communities

11/22/2017
GWTG-CAD and Mission: Lifeline® Evolution

1. GWTG-CAD was the AHA’s premier AMI registry from 2001-2010.

The nearly 600 hospitals who used GWTG-CAD found great value in the real-time reports, comparative regional benchmarks and analytic features the Patient Management Tool Provided.

2. In 2008 GWTG-CAD and ACTION Registry announced their intention to join together as the largest single registry for improving outcomes in AMI and ACS patients.

3. By 2010, GWTG-CAD sites were transitioned to ACTION Registry-GWTG supported on NCDR platform.

4. In 2007, the AHA launched Mission: Lifeline to improve heart attack systems of care.

5. In 2011 AHA announced ACTION Registry-GWTG as the data source for Mission: Lifeline Reports.

Hospital recognition was offered in 2010 and EMS recognition in 2014.

6. On April 7, 2017 the AHA announced the relaunch of GWTG-CAD.

GWTG-CAD is the primary data source for Mission: Lifeline participation.

Future iterations will offer additional data collection and reporting options.

AHA could not be happier to bring this valuable tool back to sites and know the real time nature of the reports coupled with our field team will serve our hospitals and their patients well.
Mission: Lifeline Data and Reports

Regardless data submission method, CAD was built to be the M:L Report Engine
GWTG-CAD & Mission: Lifeline® Priorities

Accelerate improvements in cardiac care
- Real-time hospital and system report options to accelerate the improvement trajectory
- Support for AHA/ACC Accreditation Programs and Services, including Chest Pain Accreditation data collection and reports at no

Expand engagement and enrollment
- Flexible data submission options to meet hospitals’ unique needs, including Certified Vendor data submission
- Free static quarterly report option for sites with limited resources
- Discounts for Critical Access Hospitals and Corporate Systems

Continue our work together to save lives!
- Continued support from AHA Field staff with ALL enrollment options, including individual consultation and staff support for local committees, regional workshops and CME events.
Calculate Measures at the Time of Data Entry

<table>
<thead>
<tr>
<th>Measure Name</th>
<th>Population</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary PCI ≤90 minutes</td>
<td>Excluded</td>
<td>Patient is excluded from the measure based on the data provided.</td>
</tr>
<tr>
<td>Mission: Lifeline First Medical Contact to Primary PCI ≤90 minutes</td>
<td>Excluded</td>
<td>Patient is excluded from the measure based on the data provided.</td>
</tr>
<tr>
<td>ECG within 10 minutes of Arrival</td>
<td>Excluded</td>
<td>Patient is excluded from the measure based on the data provided.</td>
</tr>
<tr>
<td>Arrival to Thrombolysis within 30 minutes</td>
<td>Excluded</td>
<td>Patient is excluded from the measure based on the data provided.</td>
</tr>
<tr>
<td>Arrival to transfer to PCI Center within 45 minutes (Door In Door Out)</td>
<td>Excluded</td>
<td>Patient is excluded from the measure based on the data provided.</td>
</tr>
<tr>
<td>Aspirin at Arrival</td>
<td>Excluded</td>
<td>Patient is excluded from the measure based on the data provided.</td>
</tr>
<tr>
<td>Aspirin at Discharge</td>
<td>Numerator</td>
<td>Patient is compliant with the measure.</td>
</tr>
<tr>
<td>Beta Blocker at Discharge</td>
<td>Numerator</td>
<td>Patient is compliant with the measure.</td>
</tr>
<tr>
<td>Statin at Discharge</td>
<td>Numerator</td>
<td>Patient is compliant with the measure.</td>
</tr>
<tr>
<td>ACE-Inhibitor or Angiotension Receptor Blocker (ARB) for LVSD at Discharge</td>
<td>Numerator</td>
<td>Patient is excluded from the measure based on the data provided.</td>
</tr>
<tr>
<td>Adult Smoking Cessation Advice</td>
<td>Numerator</td>
<td>Patient is compliant with the measure.</td>
</tr>
</tbody>
</table>

**Arrival at First Facility to Primary PCI ≤120 minutes (Blue Measure):**

Dominator: Patient is not compliant with the measure. Please see the Measure Logic and Rationale for recommended guidelines.
### Drill Down for Outliers

**Patient Records Report for measure Arrival at First Facility to Primary PCI \(\leq 120\) minutes (Plus Measure)**

Percentage of STEMI patients transferred from a STEMI Referral Center who received primary PCI within \(\leq 120\) minutes of arrival at the first facility (Referral Center door to device time). For admissions with STEMI diagnosed as subsequent ECG, arrival data/time is set to 0 and Arrival at First Facility to Primary PCI is set to Subsequent ECG time to Primary PCI.

**Time Periods:**
- Q1 2017: 01/01/2017 - 03/31/2017
- Q2 2017: 04/01/2017 - 06/30/2017
- Q3 2017: 07/01/2017 - 09/30/2017
- Q4 2017: 10/01/2017 - 12/31/2017

**Patients in Rassonation:**
- Q1: 1%
- Q2: 2%
- Q3: 3%
- Q4: Patient Outliers

### Transfers

- **Transferred from other facility:**
  - Yes
  - No

### Transfer Time Tracker

- **Set all active Date/Time fields:**
  - **Arrival at First hospital:** 06/11/2017 09:11 AM
  - **Transport requested:** 03/11/2017 03:10 PM
  - **Transport Arrival Date/Time:** 06/11/2017 09:15 AM
  - **Transfer out:** 05/11/2017 09:30 AM

- **Mode of transport from outside facility:**
  - Air

### ECG

- **1st ECG Date/Time:** 06/11/2017 11:05 AM
- **1st ECG obtained:** After first hospital arrival
**Filters for comparison**

<table>
<thead>
<tr>
<th>Field</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival Day</td>
<td>Monday, Tuesday, Wednesday, Thursday, Friday, Saturday</td>
</tr>
<tr>
<td>Age</td>
<td>&lt; 18, 18-45, 46-65, 66-85, &gt; 85</td>
</tr>
<tr>
<td>Gender</td>
<td>Male, Female, Unknown</td>
</tr>
<tr>
<td>Race</td>
<td>American Indian or Alaska Native, Native Hawaiian or Pacific Islander,</td>
</tr>
<tr>
<td></td>
<td>Hispanic, Black or African American, White, Asian</td>
</tr>
<tr>
<td>Hispanic Ethnicity</td>
<td>Yes, No/U TD</td>
</tr>
<tr>
<td>Arrival Mode</td>
<td>Ambulance, Walk in</td>
</tr>
<tr>
<td>Discharge Status</td>
<td>1-Home, 2-Hospice-Home, 3-Hospice-Healthcare Facility, 4-Acute Care</td>
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<tr>
<td></td>
<td>Facility, 5-Other Health Care Facility, 6-Expired, 7-Left Against</td>
</tr>
<tr>
<td></td>
<td>Medical Advice/AMA, 8-Not Documented or Unable to Determine (UTD)</td>
</tr>
<tr>
<td>Physicin</td>
<td>Bates Eric - 181900266, Khandelwal, Akshay - 105013988, Onel Brain - 1710943914</td>
</tr>
</tbody>
</table>
Reports and Enhancements

July 1, 2017 – LIVE

- MLL Receiving
- MLL Referring
- MLL ACS
- Benchmarks for regional comparison reports
- Filters for analysis by patient groups
- Patient record drill down to flag outliers
- CSV upload for ease of data transfer

Winter 2017-18

- Full data and reports for Chest Pain Accreditation
- Additional elements for CAD and ACS tracking
- Optional fields for site specific tracking
- Transferring facility picker
- EMS Agency picker
- EMS Feedback Form
Opportunities – Integration with EMS

EMS Feedback Reports

- Individual agency feedback by individual hospital
- Agency level feedback
- Support Mission: Lifeline EMS Recognition
Pre-Hospital STEMI Alert Feedback

- This data is collected by many PCI facilities
- Used for Process Improvement Activities
  - ED Through-Put
  - Appropriate EMS Activation
  - Care Coordination

AND

Feedback Loop

Do Something
Repeat
Measure
Correct
Analyze
Reporting Options

Aggregate Reporting

Individual Hospital Reporting
Regional Reporting in GWTG-CAD

Operational Reports

First Medical Contact to Device Median Time (mins)

<table>
<thead>
<tr>
<th>Hospital A</th>
<th>Q3</th>
<th>Q4</th>
<th>Q1</th>
<th>Q2</th>
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<tr>
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<td>10</td>
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<table>
<thead>
<tr>
<th>Hospital B</th>
<th>Q3</th>
<th>Q4</th>
<th>Q1</th>
<th>Q2</th>
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</thead>
<tbody>
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<td>5</td>
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<table>
<thead>
<tr>
<th>Hospital C</th>
<th>Q3</th>
<th>Q4</th>
<th>Q1</th>
<th>Q2</th>
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<tr>
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<td>18</td>
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</table>

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Mission: Lifeline Awards

Winning Hospital in 2017

Enter 2 quarters of data into GWTG-CAD in 2017, meet volume criteria and measure criteria to increase award level in 2018.

Enter 1 quarter of data into GWTG-CAD in 2017, meet volume criteria and measure criteria to maintain award level in 2018.
Opportunities – Super User Account

- Reports
  - State-wide
  - Regional
    - Aggregated
    - Individual Hospital Comparison

- Exports
  - GWTG-CAD can be used in other analysis applications or systems
  - Surveillance Tool
  - Specialty Designation

- Custom Data
  - Supports local/state initiatives
State and Regional Registry Assets

- Super User function available December 2017.
- States and/or regions can run reports comparing individual facilities, or aggregated by state or region.
- Super Users can also export patient level data into csv or excel for analysis in other systems.
- Add custom data elements and reports to support initiatives specific to your state or region.

How do states and regions currently leverage in other GWTG programs?

- Many states use the real-time reports to monitor quality of care and look for improvement opportunities across facilities.
- Data exports are used for surveillance activities and other analysis as needed by DPH.
- States and regions have added custom elements and measures to support local QI activities.
Pricing Highlights

✓ GWTG-CAD is FREE for 2017!

2017 Contract = Full Functionality – Real Time Mission: Lifeline Measure Reports and Patient Level Drill Down

2018 - Enroll by November 1, 2017 to receive a $500 discount on 2018 annual fees!

Enroll Early and Save!

2018 - No additional charge for Chest Pain Accreditation data layer and reports.

2018 - 50% discount for Critical Access Hospitals.

2018 - 10% discount for Corporate Health Systems enrolling 10 or more sites (enroll using the corporate system agreement and pay under single invoice).
A New Exclusion has been added for Measure 2 –
EMS FMC to PCI. **The Extended Travel Time Delay** may be utilized as an exclusion when
  1) Time of EMS Arrival to ED – Time of EMS Scene Departure ≥ 45 Minutes AND
  2) EMS FMC to PCI > 90 Minutes but < 120 Minutes AND
  3) EMS FMC to 12 Lead ECG Time < 10 Minutes AND
  4) First STEMI positive 12 Lead ECG time to Hospital Notification < 10 Minutes

*PLUS Measure is an additional level of achievement. A base level of bronze, silver or gold must be achieved to earn the PLUS achievement,

**Mission: Lifeline Reporting measures are not required and are not used to calculate Mission: Lifeline EMS recognition achievement.

As tools and resources are updated - They will be posted on SP
Mission: Lifeline
Mission: Lifeline EMS
EMS ML Recognition 2018
### Mission: Lifeline EMS Recognition

#### Achievement Measures

1. Percentage of patients with non-traumatic chest pain >35 years, treated and transported by EMS who received a pre-hospital 12 Lead ECG (All EMS recognition applicants)

2. Percentage of patients treated and transported directly to a STEMI receiving center, with EMS First Medical Contact to device time ≤90 Minutes. (When destination facility = STEMI Receiving Center)

3. Percentage of lytic eligible STEMI patients treated and transported to a STEMI referring hospital for fibrinolytic therapy with a Door-to-Needle time of <30 Minutes. (When destination facility = STEMI Referring Center)

4. Percentage of 12 Lead ECG's performed on patients in the field with an initial complaint of non-traumatic chest pain, >35 years, within 10 Minutes of EMS First Medical Contact

5. The percentage of hospital notifications or 12 Lead ECG transmissions suggesting/requesting a STEMI alert, that are performed within 10 minutes of the first STEMI positive 12 Lead ECG in the field

### Mission: Lifeline EMS Recognition

#### Reporting Measures (Optional)

- Percentage of patients with non-traumatic chest pain >35 years, treated and transported by EMS who received aspirin either by EMS administration, dispatch instruction or patient self-administered

- Percentage of patients with suspected stroke for whom EMS provided advance notification to the destination hospitals

- Percentage of patients with suspected stroke, evaluated by EMS, who had a documented Last Known Well (LKW) time

- Percentage of 12 Lead ECGs performed on patients in the field with an initial complaint of Acute Coronary Syndrome (ACS) symptoms

- Percentage of STEMI patients initially transported to a STEMI Referring Center (non-PCI capable) who were later transported to a STEMI Receiving Center with an EMS First Medical Contact to PCI time <120 Minutes

### PLUS Measure (Optional)

Percentage of adult Out-Of-Hospital Cardiac Arrest (OHCA) patients resuscitated on-scene with sustained ROSC of at least 20 minutes, maintained to arrival at the emergency department, who had a 12 Lead ECG performed
BECAUSE TIME MATTERS.

2017 Mission: Lifeline® EMS Recognition

The American Heart Association proudly recognizes

Metro Area Ambulance Service
Bismarck, ND

Mission: Lifeline® EMS – GOLD PLUS
Achievement Award – EMS Agency

The American Heart Association/American Stroke Association recognizes this EMS provider organization for demonstrating continued success in using the Mission Lifeline® EMS program. Thank you for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes in the community you serve.*

Nancy Brown
Chief Executive Officer, American Heart Association

James G. Jollis, MD, FACC
Chair, Mission: Lifeline Advisory Working Group

Steven Houser, MD
2016-2017 American Heart Association President

*For more information, please visit Heart.org/MLQualityAwards.
2017 Mission: Lifeline® EMS Recognition

The American Heart Association proudly recognizes

F-M Ambulance Service
Fargo, ND

Mission: Lifeline® EMS – GOLD PLUS
Achievement Award – EMS Agency

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Exceptions for 17-18

1) Minimum # of quarters to submit data into CAD and be eligible to receive a M:L Award is 1 Q
   1) STEMI
   2) NSTEMI

2) Minimum # of quarters to submit data into CAD and be eligible to move up an award level is 2 Qs
   1) STEMI
   2) NSTEMI

3) Volume Criteria is based on meeting the average quarterly volume of 9 (Receiving) and 4 (Referring)

How 2019 M:L Awards and Award goals will be approached is TBD
<table>
<thead>
<tr>
<th>STEMI Recognition Measures (Receiving Center)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of STEMI patients with Door-to-Device time ≤ 90 Minutes (Non-transfer)</td>
</tr>
<tr>
<td>Percentage of STEMI patients with EMS First Medical Contact-to-Device time ≤ 90 Minutes</td>
</tr>
<tr>
<td>Percentage of STEMI patients receiving aspirin within 24 hours of hospital arrival</td>
</tr>
<tr>
<td>Percentage of STEMI patients on aspirin at discharge</td>
</tr>
<tr>
<td>Percentage of STEMI patients on beta blocker at discharge</td>
</tr>
<tr>
<td>Percentage of STEMI patients with LDL&gt;100 who receive statin or lipid lowering drugs</td>
</tr>
<tr>
<td>Percentage of STEMI patients with left ventricular systolic dysfunction on ACEI/ARB at discharge</td>
</tr>
<tr>
<td>Percentage of STEMI patients that smoke with smoking cessation counseling at discharge</td>
</tr>
<tr>
<td><strong>PLUS Measure:</strong> 1st Door-to-Device time ≤ 120 Minutes for patients that present to a STEMI Referring Center and are transferred to a STEMI Receiving Center for Primary PCI</td>
</tr>
</tbody>
</table>

**STEMI RECEIVING CENTER VOLUME AND ACHIEVEMENT CRITERIA**

- Must have at least 36 STEMI records for the calendar year
- Must have at least 9 STEMI records in the quarter to achieve that one quarter of achievement
- Must meet achievement score of 75% or greater on all STEMI measures (Yellow)
- Must have a composite score of 85% or greater
### NSTEMI Measures - All Facilities

<table>
<thead>
<tr>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of NSTEMI patients referred to an early outpatient cardiac rehabilitation program</td>
</tr>
<tr>
<td>Percentage of NSTEMI patients with reduced Left Ventricular Ejection Fraction (&lt;40%) prescribed ACEI/ARB at discharge</td>
</tr>
<tr>
<td>Percentage of medically managed NSTEMI patients prescribed dual antiplatelet therapy at discharge (aspirin and appropriate P2Y12 inhibitor)</td>
</tr>
<tr>
<td>Percentage of NSTEMI patients whose left ventricular (LV) systolic function was evaluated during admission or is planned for after discharge</td>
</tr>
<tr>
<td>Percentage of NSTEMI patients with smoking cessation counseling at discharge</td>
</tr>
</tbody>
</table>

### MISSION: LIFELINE STEMI and NSTEMI AWARD LEVELS

- **Bronze** – 1 Calendar Quarter of compliance with Mission: Lifeline recognition criteria
- **Silver** – 4 Consecutive Calendar Quarters of compliance with Mission: Lifeline recognition criteria
  - Must have patient records entered in all 4 quarters to be eligible
- **Gold** – At least 8 Consecutive Quarters of compliance with Mission: Lifeline recognition criteria
  - Must have patient records entered in all 4 quarters to be eligible
  - Must have received Silver award level in prior achievement year
- **PLUS (STEMI Only)** – Must achieve one of the “Base” levels of recognition (Bronze, Silver or Gold) and meet 75% or greater compliance on the PLUS Measure
North Dakota

Bismarck
- CHI St. Alexius Health Bismarck
- Altru Health System

Grand Forks
- Altru Health System

Minot
- Trinity Health

Fargo
- Essentia Health
- Sanford Medical Center Fargo
2017 QUALITY ACHIEVEMENT AWARD

The American Heart Association proudly recognizes

CHI St. Alexius Health Bismarck
Bismarck, ND

Mission: Lifeline® NSTEMI – BRONZE
Achievement Award Hospital

The American Heart Association recognizes this hospital for its continued success in using the Mission Lifeline® NSTEMI program. Thank you for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes in the community you serve.

Nancy Brown
Chief Executive Officer, American Heart Association

James G. Jolls, MD, FACC
Chief, Mission: Lifeline Advisory Working Group

Steven Houser, MD
2016-2017 American Heart Association President

*For more information, please visit Heart.org/MLQualityAwards.
The American Heart Association proudly recognizes

Essentia Health
Fargo, ND

Mission: Lifeline® NSTEMI – BRONZE
Achievement Award Hospital

The American Heart Association recognizes this hospital for its continued success in using the Mission Lifeline® NSTEMI program. Thank you for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes in the community you serve.

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Steven Houser, MD
2016-2017 American Heart Association President

*For more information, please visit Heart.org/MLQualityAwards.
The American Heart Association proudly recognizes

Sanford Fargo Medical Center
Fargo, ND

Mission: Lifeline® NSTEMI – BRONZE
Achievement Award Hospital

The American Heart Association recognizes this hospital for its continued success in using the Mission Lifeline® NSTEMI program. Thank you for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes in the community you serve.

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2016-2017 American Heart Association President

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2017 QUALITY ACHIEVEMENT AWARD

The American Heart Association proudly recognizes

CHI St. Alexius Health Bismarck
Bismarck, ND

Mission: Lifeline® STEMI Receiving Center – SILVER
Achievement Award Hospital

The American Heart Association recognizes this hospital for its continued success in using the Mission Lifeline® STEMI program. Thank you for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes in the community you serve.*

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2016-2017 American Heart Association President

*For more information, please visit Heart.org/MLQualityAwards.
2017 QUALITY ACHIEVEMENT AWARD

The American Heart Association proudly recognizes

Sanford Medical Center Fargo
Fargo, ND

Mission: Lifeline® STEMI Receiving Center – SILVER
Achievement Award Hospital

The American Heart Association recognizes this hospital for its continued success in using the Mission Lifeline® STEMI program. Thank you for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes in the community you serve.

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2016-2017 American Heart Association President

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The American Heart Association proudly recognizes

Altru Health System
Grand Forks, ND

Mission: Lifeline® STEMI Receiving Center – SILVER PLUS
Achievement Award Hospital

The American Heart Association recognizes this hospital for its continued success in using the Mission Lifeline® STEMI program. Thank you for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes in the community you serve."

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“For more information, please visit Heart.org/MLQualityAwards.”
2017 QUALITY ACHIEVEMENT AWARD

The American Heart Association proudly recognizes

Trinity Health
Minot, ND

Mission: Lifeline® STEMI Receiving Center – SILVER
Achievement Award Hospital

The American Heart Association recognizes this hospital for its continued success in using the Mission Lifeline® STEMI program. Thank you for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes in the community you serve.

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Chief, Mission Lifeline Advisory Working Group

Steven Houser, MD
2015-2017 American Heart Association President

*For more information, please visit Heart.org/MLQualityAwards.
Mindy Cook, RN BSN  
Sr. Director Quality and System Improvement  
Director Mission: Lifeline North Dakota, Minnesota 

American Heart Association, Midwest Affiliate  
Contact Information:  
Office: 952-278-7934  
Mobile: 218-770-3305  
Fax: 952.835.5828  
E-mail: Mindy.Cook@heart.org  
www.heart.org/NDMissionLifeline     www.heart.org/missionlifelinemn

Quality of Life is why