NCDR 13 Annual Conference
ACTION Registry-GWTG
Workshop #14

Disclosures
• Dr. Fonarow, MD, FACC, FAHA
  - Boston Scientific, Takeda, Amgen, Johnson&Johnson, Medtronic, Gambro, NIH/NIAID, Novartis, NHLBI
• Kim Hustler RN
  No Disclosures
• Susan Rogers RN, MSN, NE-BC
  No Disclosures
ARS Question # 1

Do you take advantage of the ACTION Registry-GWTG publications available on the NCDR website?

A. Yes  
B. No
The National Cardiovascular Data Registry (NCDR) Data Quality Brief The NCDR Data Quality Program in 2012

Authors:
John C. Messenger, MD,* Kalon K. L. Ho, MD, MSC,† Christopher H. Young, PhD, †, Lara E. Slattery, MHS, †, Jasmine C. Draoui, MS, †, Jeptha P. Curtis, MD,§ Gregery J. Dehmer, MD, Frederick L. Grover, MD, †, Michael J. Mirro, MD,¶ Matthew R. Reynolds, MD, MSC, ** Ivan C. Rokos, MD, †† John A. Spertus, MD, MPH, †† Tracy Y. Wang, MD, MHS, MSC, §§ Stuart A. Winston, DO, John S. Rumsfeld, MD, PHD, ¶¶ Frederick A. Masoudi, MD, MSPH, * on behalf of the NCDR Science and Quality Oversight Committee Data Quality Workgroup

Journal of the American College of Cardiology Vol. xx, No. x, 2012
Objectives: The NCDR developed the Data Quality Program to ensuring completeness, consistency and accuracy of data submitted to the observational clinical registries.

The Data Quality Program consist of 3 main concepts:
1) Data quality report
2) Set internal quality assurance protocols
3) Yearly audits

Conclusion: The 2010 audits provided evidence that many fields in the NCDR accurately represent the data from the medical charts.

The ACCF is undertaking a series of initiatives aimed at creating a QA rapid learning system, to monitor, evaluate and improve data quality.
Objective: Evidenced based document
Assist healthcare providers in clinical decision making of diagnosis, management & prevention of specific diseases & conditions

Focus- management of patients with STEMI's
Emphasizing:
- Advances in reperfusion therapy
- Organization of regional systems of care
- Transfer algorithms
- Evidenced based antithrombotic and medical care.
ACTION Inclusion Criteria

Documentation:
- 71 y.o. female patient
- Presents to the ED with symptoms of ACS
- The 1st ECG shows LBBB
- There is no prior 12 lead to verify if LBBB old or new
- Cardiac Biomarkers are positive

ARS Question
Is this patient included in ACTION as a STEMI or a NSTEMI?

1. STEMI
2. NSTEMI

Documentation:
- 71 y.o. female patient
- Presents to the ED with symptoms of ACS
- The 1st ECG shows LBBB
- There is no prior 12 lead to verify if LBBB old or new
- Cardiac Biomarkers are positive

Is this patient included in ACTION as a STEMI or a NSTEMI?
1. STEMI
2. NSTEMI
3. Per Physician documentation
Characteristics and in-hospital outcomes of patients presenting with STEMI found to have significant coronary artery disease on coronary angiography and managed medically: Stratification according to renal function

Authors: Elias B. Hanna, Anita Y. Chen MS, Matthew T. Roe, MD, Jorge F. Saucedo, MD

American Heart Journal, Volume 164, Issue 1, Pages 52-57.e1, July 2012
Objectives: Therapies and outcomes of patients with NSTEMI's with significant CAD and managed medically had not been studied in a large Registry.

Conclusion:
- Nonrevascularized patients have a higher in hospital mortality
- Nonrevascularized with CKD have increased comorbidities than those without CKD.
- Less frequently received Guidelines recommended care

Differences in Treatment Patterns and Outcomes between Hispanics and Non-Hispanic Whites Treated for ST-Segment Elevation Myocardial Infarction: Results from NCDR® ACTION Registry®-GWTG

Authors
L. Guzman, MD, Shuang Li, MS, Tracy Y. Wang, MD, MHS, MSc, Martha L. Daviglus, MD, PhD, Jose Exaire, MD, Carlos J. Rodriguez, MD, MPH, Vilma I. Torres, MD, Marjorie Funk, PhD, RN, Jorge Saucedo, MD, Chris Granger, MD, Ileana L. Pina, MD, MPH, Mauricio G. Cohen, MD


| Table 1 | Initial Evaluation, Times to Intervention, In-Hospital Treatment, and Discharge Care |
|-----------------|-----------------|-----------------|-----------------|
|                | Hispanics (n = 1,694) | Non-Hispanic Whites (n = 38,844) | p Value |
| Symptom onset to hospital arrival, h | 2.0 (1.0-4.5) | 1.6 (0.97-2.42) | <0.0001 |
| Emergency arr. % | 41.5% | 47.0% | <0.0001 |
| Pre-hospital ECG % | 32.8% | 37.5% | <0.0001 |
| Arrival to ECG ≤30 min % | 81.6% | 66.5% | <0.0001 |
| DO to balloon. min | 74 (55-94) | 69 (53-97) | <0.0001 |
| In-hospital treatment during first 24 h | | | |
| Diagnostic catheterization % | 89.2% | 88.7% | 0.44 |
| Reperfusion therapy % | 93.5% | 93.3% | 0.041 |
| Primary PCI % | 83.4% | 80.3% | 0.17 |
| Decreasing trend % | 47.9% | 49.2% | 0.47 |
| Discharge care | | | |
| Smoking cessation counseling % | 56.2% | 59.7% | 0.44 |
| Diet counseling % | 55.2% | 94.3% | 0.16 |
| Exercise counseling % | 84.6% | 88.3% | <0.0001 |
| Cardiac rehabilitation referral % | 68.8% | 92.3% | <0.0001 |
Objectives: Ethnic disparities in STEMI management have not been well characterized

Conclusion: Hispanic patients treated for STEMI have similar clinical outcomes compared with non-Hispanic-whites.
- There was longer delays to STEMI recognition & reperfusion
- Less utilization of evidence-based discharge care

Clopidogrel Use and Hospital Quality in Medically Managed Patients With Non-ST-Segment-Elevation Myocardial Infarction

Authors: Thomas M. Maddox, P. Michael Ho, Thomas T. Tsai, Tracy Y. Wang, Shuang Li, S. Andrew Peng, Stephen D. Wiviott, Fredrick A. Masoudi and John S. Rumsfeld

Objectives: Clopidogrel prescription is a class I guideline recommendation for medically managed patients with NSTEMI. Has been underused in NSTEMI. We evaluated contemporary rates of its use and evaluated associated factors, with a particular focus on hospital quality of MI care.
• Conclusion: Clopidogrel prescription is significantly underused in the medically managed NSTEMI population and demonstrates wide variability by hospital. Although hospital quality of MI care is associated with its use, the findings suggest that it only has a modest effect. Therefore, efforts to improve Clopidogrel use likely will require measures beyond improving the overall hospital quality of MI care.

NSTEMI Acute (<24 hrs) Medications

**ADP Receptors post CABG**

- Documentation:
  - 50 y.o. male patient was admitted to a P-PCI center and is Dx with a STEMI.
  - He is taken directly to the cath lab where he underwent a PCI to the RCA.
  - The RCA dissected and the patient was take immediately to the OR for CABG
ARS Question:

Would this patient be included in Metric 28, “AMI revascularized patients discharged on ADP receptor inhibitors”?  
  1. No  
  2. Yes

Documentation:
- 50 y.o. male patient was admitted to a P-PCI center and is Dx with a STEMI.  
- He is taken directly to the cath lab where he underwent a PCI to the RCA.  
- The RCA dissects and the patient is taken immediately to the OR for CABG.

Would this patient be included in Metric 28, “AMI revascularized patients D/C’d on ADP receptor inhibitors”?  
  1. No  
  2. Yes

28. AMI revascularized patients discharged on ADP receptor inhibitors  
Description: Proportion of AMI revascularized patients prescribed an ADP receptor inhibitor at discharge.  
Numerator: All AMI patients who are prescribed ADP Receptor Inhibitors at discharge.  
Denominator: All AMI patients who are prescribed ADP Receptor Inhibitors at discharge and who underwent either PCI or CABG.  
Inclusion Criteria: • All ACTION Registry-GIANT patients.  
• Data from submissions that pass NCOR data inclusion thresholds.

Inclusion Criteria: • All ACTION Registry-GIANT patients.  
• Data from submissions that pass NCOR data inclusion thresholds.

Inclusion Criteria: • Patients <18 years of age  
• Patients with a discharge location of other hospital  
• Patients discharged with comfort measures only  
• Patients with a discharge status of deceased  
• Contraindicated or blinded to ADP Receptor Inhibitors (Clopidogrel, Ticlopidine and Prasugrel)  
• Patients with a discharge location of hospice  
• Patients with a discharge location of AMI  
• Patients with a discharged medication of Warfarin = Yes  
• Records that are incomplete for data elements used in the algorithm.
NCDR. 13 Case Scenario Presentation
ACTION Registry-GWTG

Kim Hustler, RN
Clinical Quality Consultant

Case Scenarios

• Unique sessions for beginners to experts
• Real case scenarios
• Coding based on the current data definitions
• ARS participation

Objectives for the ACTION Registry-GWTG
Case Scenario Presentation

Describe specific data collection instructions for the ACTION Registry-GWTG

Demonstrate knowledge of inclusion criteria through participation with ARS

Discuss the relationships between data definitions and medical documentation
Inclusion Criteria

Documentation:

• 97-yo female- altered level of responsiveness
• Noted SOB- no change from baseline
• Hx COPD- continues to smoke, on home oxygen
• Initial troponin 0.784- positive
• ED & primary physician- initial presentation r/o CVA, noncompliant with O2
• Cardiologist note- probable NSTEMI

ARS Question #1

Would this patient meet inclusion criteria for the ACTION Registry-GWTG?

1. No
2. Yes
Inclusion Criteria

Documentation:

• Patient- “full out stroke symptoms” per EMS
• On the way to hospital ECG- ST elevation
• No c/o chest pain, confirmed arm pain per EMS
• TPA administered for both stroke and MI
• ST elevation to Cath lab same day

ARS Question #2

Would this patient be included when he was initially a stroke patient?

1. No
2. Yes

Inclusion Criteria

Documentation:

• Patient- full out stroke symptoms per EMS
• On the way to hospital ECG- ST elevation
• No c/o chest pain, confirmed arm pain per EMS
• TPA administered for both stroke and MI
• ST elevation to Cath lab same day

Would this patient be included when he was initially a stroke patient?

1. No
2. Yes
Inclusion Criteria

Documentation:

Site Questions:
• Are there any patients that are typically excluded other than symptoms outside of the 24 hour window?
• We have questions about patients from sister hospitals being excluded and patients transferred in without Thrombolytic

ARS Question #3
Which one of these patients should be included in the ACTION Registry-GWTG?

1. Last symptoms of ACS 36 hours prior to arrival
2. STEMI transferred to my facility for CABG
3. Scheduled cath has STEMI post procedure
4. STEMI presentation with clean coronary arteries
5. Presents with symptoms of ACS with minor Troponin elevation - diagnosis HF
Inclusion Criteria

Documentation:

Site Questions:
- Are there any patients that are typically excluded other than symptoms outside of the 24 hour window?
- We have questions about patients from sister hospitals being excluded and patients transferred in without Thrombolytic

ARS Question #4

Which one of these patients should be included in the ACTION Registry-GWTG?

1. Presents with cough, fever, SOB-positive Troponin 23 hours after arrival-diagnosis Pneumonia & NSTEMI
2. Presents with SOB, chest hurting, weakness-positive Troponin 23 hours after arrival-diagnosis Pneumonia & NSTEMI
3. Presents with SOB, chest hurting, weakness-positive Troponin 23 hours after arrival-diagnosis Takotsubo only
4. Presents with SOB, chest hurting, weakness-positive Troponin 25 hours after arrival-diagnosis Pneumonia & NSTEMI
Inclusion Criteria

Documentation:

Site Questions:
- Are there any patients that are typically excluded other then symptoms outside of the 24 hour window?
- We have questions about patients from sister hospitals being excluded and patients transferred in without Thrombolytic

ARS Question #5

Which one of these patients should be included in the ACTION Registry-GWTG?

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>ECG</th>
<th>Troponin (URL 0.10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>ECG- ST&lt;1mm</td>
<td>Troponin 0.06</td>
</tr>
<tr>
<td>CP</td>
<td>ECG- ST&gt;1mm f/u ECG's negative- transient elevation</td>
<td>Troponin 0.06</td>
</tr>
<tr>
<td>CP</td>
<td>ECG- ST&lt;1mm post stress test – STEMI ECG</td>
<td>Troponin 0.06</td>
</tr>
<tr>
<td>CP</td>
<td>initial ECG- negative 2&lt;sup&gt;nd&lt;/sup&gt; &amp; 3&lt;sup&gt;rd&lt;/sup&gt; ECG negative, 6 hrs after arrival recurrent symptoms- 4&lt;sup&gt;th&lt;/sup&gt; ECG STEMI</td>
<td></td>
</tr>
</tbody>
</table>
Exclusions- Patients who:
- No symptoms of ACS within 24 hours of arrival
- Present for symptoms other than symptoms of ACS
- Present for planned procedure- diagnostic cath- MI after arrival
- Transfer your facility for reason other than acute MI care, such as CABG, or insurance reasons
- No STEMI ECG or elevated cardiac biomarkers within 24 hours of arrival
- ECG ST elevation is transient
- Rule in as NSTEMI- transfer to your facility >24 hours after arrival to the first facility

Exclusions- Patients who:
- Rule in- STEMI- transfer to your facility >72 hours after arrival to the first facility
- Initially present as STEMI or NSTEMI- are later ruled out- Pericarditis, Takotsubo (without MI), biomarker elevation secondary to other reason (must be documented- HF, sepsis, renal failure)
- Documentation MI is “old” MI, occurred >24 hours prior to arrival
- Have infarction secondary to stress test
- Only have symptoms of ACS during activity (such as shoveling snow)- no symptoms at rest
- Present in cardiac arrest- decease prior to your facility providing AMI care

Inclusion Criteria

Documentation:
- Patient arrives to ED at 01:00 after developing intense central chest pressure radiating to left arm
- Initial cardiac biomarkers negative
- ECG- no ischemic changes
- F/u ECG and biomarkers x3- negative
- Continued symptoms to cath lab at 16:00- stent placed
- Post cath- severe CP- ST elevation- returned to cath lab
ARS Question #6

Should this STEMI identified post procedure be included in the ACTION Registry-GWTG?

1. No
2. Yes

Inclusion Criteria

Documentation:
- Patient arrives to ED at 01:00 after developing intense central chest pressure radiating to left arm
- Initial cardiac biomarkers negative
- ECG- no ischemic changes
- F/u ECG and biomarkers x3- negative
- Continued symptoms-to cath lab at 16:00- stent placed
- Post cath- severe CP- ST elevation- returned to cath lab

Should this NSTEMI identified post procedure be included in the ACTION Registry-GWTG?

1. No
2. Yes

Section I- Lab Results

Seq. #10110 Creatinine Peak

Documentation:
- Patient arrives to ED after developing intense central chest pressure radiating to left arm
- Cath lab - stent placed
- Post cath- STEMI - back to cath lab
- Initial blood draw creatinine value completed- 0.9 mg/dl
- No follow up value completed
ARS Question #7

How would you answer Seq. #10110 Peak Creatinine level collected?

1. No
2. Yes

Seq. #10110 Creatinine Peak

Documentation:
• ED after developing intense central CP to left arm
• Cath lab - stent placed
• Post cath- STEMI-back to cath lab
• Initial blood draw creatinine value completed- 0.9 mg/dl
• No follow up value completed

How would you answer Seq. #10110 Peak Creatinine level collected?
1. No
2. Yes

Section D- History & Risk Factors
Seq. #5140 Peripheral Artery Disease

Documentation:
• Presents and rules in as NSTEMI
• Documentation in the medical record provided history of:
  • Renal artery disease
  • Deep vein thrombosis (DVT)
ARS Question #8

Would renal artery disease and/or DVT be captured in history of peripheral artery disease?
1. Renal-yes, DVT-yes
2. Renal-no, DVT-no
3. Renal-yes, DVT-no
4. Renal-no, DVT-yes

| Cerebrovascular Disease | | Yes |
| Renal artery disease | Yes |
| Deep vein thrombosis (DVT) | Yes |

Seq. #4140 Peripheral Artery Disease

Documentation:
NSTEMI-history of:
Renal artery disease
Deep vein thrombosis (DVT)

Would renal artery disease and/or DVT be captured in history of peripheral artery disease?
1. Renal-yes, DVT-yes
2. Renal-no, DVT-no
3. Renal-yes, DVT-no
4. Renal-no, DVT-yes

Section E- Medications
Seq. #6850 Anticoagulant

Documentation:
- Presents and meets inclusion criteria for NSTEMI
- History of ESRD
- Physician ordered heparin (UFH) SQ instead of IV
- No other anticoagulant administered
ARS Question #9

How would you code the heparin SQ administration?
1. Anticoagulant- yes, enter UFH- bolus
2. Anticoagulant- yes, only enter in Date/Time
3. Anticoagulant- no
4. Anticoagulant- contraindicated

Seq. #6850 Anticoagulant

Documentation:
- Presents and meets inclusion criteria for NSTEMI
- History of ESRD
- Physician ordered heparin (UFH) SQ instead of IV
- No other anticoagulant administered

How would you code the heparin SQ administration?
1. Anticoagulant- yes, enter UFH-bolus
2. Anticoagulant- yes, only enter in Date/Time
3. Anticoagulant- no
4. Anticoagulant- contraindicated

Section H- In-Hospital Events
Seq. #9040 Suspected Bleeding Event

Documentation:
- Presentation meets inclusion criteria for STEMI
- History of anemia
- To cath lab for primary PCI
- RN documents hematoma requiring pressure
- The hgb dropped 3 g/dl
- Physician- no documentation of a bleeding event
ARS Question #10

How would you answer Suspected Bleeding Event for this scenario?

1. No
2. Yes

Seq. #9040 Suspected Bleeding Event

Documentation:
- Presentation meets inclusion criteria for STEMI
- History of anemia
- To cath lab for primary PCI
- RN documents hematoma requiring pressure The hgb dropped 3 g/dl
- Physician- no documentation of a bleeding event

How would you answer Suspected Bleeding Event for this scenario?

1. No
2. Yes

Section H- In-Hospital Events

Seq. #9040 Suspected Bleeding Event

Documentation:
- Presentation meets inclusion criteria for STEMI
- Went to cath lab for primary PCI
- 24 hours post procedure there is a 3 g/dl drop in Hgb
- There is no documentation in the medical record of any bleed or suspected bleed
ARS Question #11

How would you answer Suspected Bleeding Event for this scenario?

1. No
2. Yes

Seq. #9040 Suspected Bleeding Event

Documentation:
- Presentation meets inclusion criteria for STEMI
- Went to cath lab for primary PCI
- 24 hours post procedure there is a 3 g/dl drop in Hgb
- There is no documentation in the medical record of any bleed or suspected bleed

How would you answer Suspected Bleeding Event for this scenario?
1. No
2. Yes

Section E- Medications
Comfort Measures Only

Documentation:
- Patient presents with symptoms of ACS and rules in as NSTEMI
- She is elderly with significant health issues
- Decision by patient and family- placed on comfort measures only
- Only ASA is administered within 24 hours of arrival
- There is no documentation of contraindications to any of the other medications
ARS Question #12

How would you answer all the medications within 24 hours, other than ASA?

1. No
2. Yes
3. contraindicated

Comfort Measures Only

Documentation:
- Patient presents with ACS and rules in as NSTEMI
- She is elderly with significant health issues
- Decision by patient and family- placed on comfort measures only
- Only ASA is administered within 24 hours of arrival
- There is no documentation of contraindications to any of the other medications

How would you answer all the medications within 24 hours, other than ASA?

1. No
2. Yes
3. contraindicated

Section F- Procedures and Tests

Diagnostic Cath/PCI 2 cath lab visits

Documentation:
- Patient admitted-NSTEMI
- First cath lab visit revealed an innominate thrombotic lesion as the source of his ischemia- he was treated with anticoagulants for 2 days
- Second cath lab visit- No change in thrombus- treated with thrombectomy device
ARS Question #13

How can we enter these two separate cath lab visits?

1. Enter only the first cath lab visit only
2. Enter both- Diag Angiography & PCI- date/time of 1st cath lab visit, Seq. #7021/7022
3. Enter 1st visit into Diag Angiography #7021/7022 & 2nd visit into PCI Seq. #7101/7102
4. Enter Diag Angiography & PCI for date/time of 2nd (PCI) cath lab visit, #7101/7102

Diagnostic Cath/PCI 2 cath lab visits

Documentation:

• NSTEMI- First cath lab visit revealed an innominate thrombotic lesion as the source of his ischemia-he was treated with anticoagulants for 2 days
• Second cath lab visit- No change in thrombus- treated with thrombectomy device

How can we enter these two separate cath lab visits?

1. Enter only the first cath lab visit only
2. Enter both- Diag Angiography & PCI- date/time of 1st cath lab visit, Seq. #7021/7022
3. Enter 1st visit into Diag Angiography #7021/7022 & 2nd visit into PCI Seq. #7101/7102
4. Enter Diag Angiography & PCI for date/time of 2nd (PCI) cath lab visit, #7101/7102

Section F- Procedures and Tests

Seq. 7100 PCI

Documentation:

• Presents with N/V, left arm pain
• 12 lead ECG- STEMI
• To cath lab for Primary PCI
• Multiple attempts were made to cross the lesion without success
• No PCI is performed
ARS Question #14

If a PCI was attempted but not able to cross the lesion how do you answer Seq #7100?

1. No
2. Yes

Seq. 7100 PCI

Documentation:
- Presents with N/V, left arm pain
- 12 lead ECG - STEMI
- To cath lab for Primary PCI
- Multiple attempts were made to cross the lesion without success
- No PCI is performed

If a PCI was attempted but not able to cross the lesion how do you answer sequence 7100?

1. No
2. Yes