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

Objectives

- Discuss the registry updates for ACTION Registry-GWTG
- Verbalize ACTION Registry-GWTG recognition criteria
ARS Question # 1
How Long Have YOU Been Participating In THE ACTION Registry-GWTG Data Collection Process?

1. Less than 1 year
2. 1-3 Years
3. 4-7 years
4. Not applicable

Registry Updates

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrolled Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>175</td>
</tr>
<tr>
<td>2008</td>
<td>300</td>
</tr>
<tr>
<td>2009</td>
<td>575</td>
</tr>
<tr>
<td>2010</td>
<td>640</td>
</tr>
<tr>
<td>2011</td>
<td>656</td>
</tr>
<tr>
<td>2012</td>
<td>680</td>
</tr>
<tr>
<td>2013</td>
<td>800</td>
</tr>
</tbody>
</table>

Recognition Levels

<table>
<thead>
<tr>
<th>Award Levels</th>
<th>Must meet compliance on composite measures</th>
<th>Participate in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum</td>
<td>90% compliance &gt; = 8 consecutive quarters entering data</td>
<td>Premier</td>
</tr>
<tr>
<td>Gold</td>
<td>90% compliance &gt; = 8 consecutive quarters entering data</td>
<td>Premier or Limited</td>
</tr>
<tr>
<td>Silver</td>
<td>90% compliance &gt; = 4 consecutive quarters entering data</td>
<td>Premier or Limited</td>
</tr>
</tbody>
</table>
### Recognition

#### 2012
- 164 hospitals met the Platinum level
- 20 hospitals met the Gold level
- 73 hospitals met the Silver level

#### 2011
- 171 hospitals met Gold level
- 88 hospitals met Silver level
Reducing 30 Readmission Using ACTION Registry-GWTG Data

Workshop 7

Objectives

• Discuss the changes CMS has made to reimbursement for avoidable readmissions.
• Discuss challenges to collecting 30 day readmission data.
• Discuss what the H2H initiative offers hospitals.

What you need to know

• Effective 2012 Medicare is reduced reimbursement for avoidable re-admissions
  Patient Protection and Affordable Care Act (PPAC)
• Not all readmissions are avoidable
  – Not all readmissions are avoidable, some are
Rate of readmission for heart attack patients

Lower the percent the better

Challenges to capturing the data

- No resources available to follow up after D/C
- Hospitals that attempt to do 30 day follow up
  - Not reliable data, not collected consistently
  - Data not accurate, not reliable for research
What Needs to be in Place to 30 Day Re-admissions?

- Implementation of a hospital re-admission program
  - To include quality data reporting measures
- Case Management: Assess readiness for D/C
- Patient Communication: A level of understanding & adherence after D/C
- Follow up Care: Assure patients understand and follow through with D/C medications and rehab

Why Report Outcomes?

- Readmissions are costly, and often preventable
- Measuring & reporting readmission rates will create incentives for hospitals and health systems to:
  - Evaluate the spectrum of care to patients
  - Identify systemic or condition-specific changes that will make care safer & more effective
  - Assess the readiness of patients for discharge
  - Improve discharge instructions
  - Reconcile medications
  - Transition patients to outpatient care or other institutional care more toughly
### Baseline Characteristics

#### STEMI vs. NSTEMI

<table>
<thead>
<tr>
<th>Variable</th>
<th>STEMI (n = 50,604)</th>
<th>NSTEMI (n = 79,520)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (yrs)</td>
<td>62</td>
<td>67</td>
</tr>
<tr>
<td>Female sex</td>
<td>29%</td>
<td>39%</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>25%</td>
<td>38%</td>
</tr>
<tr>
<td>Prior MI</td>
<td>19%</td>
<td>30%</td>
</tr>
<tr>
<td>Prior HF</td>
<td>5%</td>
<td>18%</td>
</tr>
<tr>
<td>Prior PCI</td>
<td>20%</td>
<td>28%</td>
</tr>
<tr>
<td>Prior CABG</td>
<td>6%</td>
<td>19%</td>
</tr>
<tr>
<td>Prior stroke</td>
<td>5%</td>
<td>10%</td>
</tr>
</tbody>
</table>

### In-Hospital Outcomes

#### STEMI vs. NSTEMI

<table>
<thead>
<tr>
<th>Variable</th>
<th>STEMI (n = 50,604)</th>
<th>NSTEMI (n = 79,520)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median hospital LOS</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Death*</td>
<td>6.2%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Re-infarction</td>
<td>0.8%</td>
<td>0.6%</td>
</tr>
<tr>
<td>HF</td>
<td>5.2%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Cardiogenic Shock</td>
<td>4.5%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Stroke</td>
<td>0.5%</td>
<td>0.6%</td>
</tr>
<tr>
<td>RBC Transfusion**</td>
<td>3.7%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Suspected Bleeding Event**</td>
<td>3.2%</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

### How Does ACTION Fit In?

**Uses established guidelines of care**

**Performance Measures:**

- **Acute/In-hospital Measures**
  - Aspirin Arrival
  - STEMI - Any reperfusion
  - STEMI - Lytic - Door to Needle
  - STEMI - PCI – D2B
  - STEMI - D2B Transfer in
  - LVSD Evaluation
Performance Measures

Discharge Performance Measures

- Aspirin
- B-blocker
- ACE or ARB
- Statin for LDL ≥100mg/dL
- Smoking cessation
- Cardiac rehabilitation
**Performance Measures**

**Discharge Performance Measures**

- Aspirin
- B-blocker
- ACE or ARB
- Statin for LDL $\geq$100mg/dL
- Smoking cessation
- **Cardiac rehabilitation**

---

**Cardiac Rehabilitation**

Team members who assist patients with recognition of signs and symptoms:

- Physician
- Nurse
- Social worker
- Occupational therapist
- Pharmacist

  » Exercise safely.
  » Eat a heart-healthy diet.
  » Quit smoking.
  » Reduce stress and depression.
  » Get back to work sooner

---

**Reduce Risk and Cost**

- In a study where a nurse educator provided cardiovascular patients with a pharmacological plan (a description of the reason for drug use, mechanism of action, possible drug interactions, and symptom management) in addition to providing a list of medications, dosage, and instructions, participating patients had a 35% lower risk of readmission or death.

- Discharge planning and home follow-up including medication management has been shown to reduce readmissions and reduce length of hospital stay. In a study of elderly patients who received medication management discharge planning and follow-up, total Medicare reimbursements for health services in the control group were approximately $1.2$ million and only $600,000$ in the intervention group.

- It is estimated that issues with medication use and poor medication adherence in cardiovascular treatment costs the U.S. $100$ billion annually.22
Medication Use Correlates with a Decrease in Patient Mortality

Medication use has been proven to reduce morbidity and mortality in patients with Heart failure and AMI. Using medication as a tx continues to increase

The increase in cardiovascular medication

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of cardiovascular medications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td>70.1</td>
<td>73.2</td>
<td>76.3</td>
<td>79.4</td>
<td>82.5</td>
<td>85.6</td>
<td>88.7</td>
<td>91.8</td>
</tr>
<tr>
<td>2nd</td>
<td>42.3</td>
<td>45.4</td>
<td>48.5</td>
<td>51.6</td>
<td>54.7</td>
<td>57.8</td>
<td>60.9</td>
<td>64.0</td>
</tr>
<tr>
<td>3rd</td>
<td>30.2</td>
<td>33.3</td>
<td>36.4</td>
<td>39.5</td>
<td>42.6</td>
<td>45.7</td>
<td>48.8</td>
<td>51.9</td>
</tr>
<tr>
<td>4th</td>
<td>20.1</td>
<td>23.2</td>
<td>26.3</td>
<td>29.4</td>
<td>32.5</td>
<td>35.6</td>
<td>38.7</td>
<td>41.8</td>
</tr>
</tbody>
</table>

Quality Metrics

- Door to EKG (within 10 min)
- STEMI- Acute ADP Receptor Inhibitor Therapy
  - Vascularized Patients Discharged on ADP Receptor Inhibitors
  - ADP Receptor Inhibitors Prescribed at Discharge for medically treated patients
  - LDL assessment (in-hospital)
  - NSTEMI - Excessive Initial UFH Dosing
  - Excessive Initial Enoxaparin Dosing
  - Excessive Initial GP IIb/IIIa Dosing
  - STEMI - Anticoagulant
  - Aldosterone Blocking Agents at Discharge

- NSTEMI - Excessive Initial UFH Dosing
- Excessive Initial Enoxaparin Dosing
- Excessive Initial GP IIb/IIIa Dosing
- STEMI - Anticoagulant
- Aldosterone Blocking Agents at Discharge
Quality Metrics

- Door to EKG (within 10 min)
- STEMI - Acute ADP Receptor Inhibitor Therapy
- Vascularized Patients Discharged on ADP Receptor Inhibitors

**ADP Receptor Inhibitors Prescribed at Discharge for medically treated patients**

- LDL assessment (in-hospital)
- NSTEMI - Excessive Initial UFH Dosing
- Excessive Initial Enoxaparin Dosing
- Excessive Initial GP IIb/IIIa Dosing
- STEMI - Anticoagulant
- Aldosterone Blocking Agents at Discharge

---

Discharge Medications

**STEMI vs. NSTEMI**

<table>
<thead>
<tr>
<th>Discharge Medication</th>
<th>STEMI</th>
<th>NSTEMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA Blockers</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>Beta Blockers</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>tic*</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>Clopidogrel</td>
<td>93%</td>
<td>98%</td>
</tr>
<tr>
<td>Prasugrel*</td>
<td>63%</td>
<td>63%</td>
</tr>
<tr>
<td>Total P2Y12's</td>
<td>12%</td>
<td>12%</td>
</tr>
</tbody>
</table>

---

*P2Y12's may overlap*
**Discharge Interventions**

**STEMI vs. NSTEMI**

---

**H2H**

*Hospital to Home*

**Goal**
To reduce 30 day, all-cause, risk standardized readmission rates for patients discharged with cardiac conditions by 20%

**Core Concept Areas**
- Follow-up within 1 week of discharge
- Post-discharge medication management
- Patient recognition of signs and symptoms

**Components Include:**
- 1 topic focus
- 1 tool kit
- 3 webinars
- 1 survey

**Community call-to-action**
to help build tools and strategies to reduce readmissions

---

**Success Metrics and Tools**

Reducing readmissions is possible if-
- The clinician does…
- The patient does…

To help the clinician and patient be successful, H2H provides *tools* for each metric.

- [Success metric](#)
- [Tool](#)
- [Improvement](#)
H2H Challenges

“See You in 7” Challenge
Goal: All patients discharged with a diagnosis of HF and MI have a scheduled follow-up appointment/cardiac rehab referral made within 7 days of discharge

“Mind Your Meds” Challenge
Goal: Clinicians and patients discharged with a diagnosis of HF/MI work together and ensure optimal medication management.

“Signs and Symptoms” Challenge
Goal: Activate patients to recognize early warning signs and have a plan to address them.

New to H2H?
Register on the H2H Website

Enrolled in H2H and don’t know how to get started?
Review the “Getting Ready Checklist”
Outcomes Report Metric #21
Cardiac rehabilitation patient referral from an inpatient setting

Documentation:

• 35 yo presented to ED 3 hours of "burning" chest pain-radiating to arms & back- diaphoresis & nausea
• Risk factors- dyslipidemia, obesity
• ECG- STEMI
• Positive Troponin
• Angiography results: Normal coronary arteries, normal systolic function, mild elevated end-diastolic pressure, EF 55%

ARS Question

Would this patient be included in the metric cardiac rehabilitation at discharge?

1. No
2. Yes
Answer: #2 Yes

- All STEMI and NSTEMI patients are recommended for out-patient cardiac rehab
- If you have Physician/ NP documentation that cardiac rehab is not indicated for this patient, you can select “ineligible”.

<table>
<thead>
<tr>
<th>Description: Proportion of patients that received a cardiac rehab referral.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Numerator</strong></td>
</tr>
<tr>
<td><strong>Denominator</strong></td>
</tr>
<tr>
<td><strong>Inclusion Criteria</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Exclusion Criteria</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>
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
- Utilizing data definitions, performance measures & quality metrics
- Utilizing dashboard drill downs & data extract
- ARS participation

Objectives for the ACTION Registry-GWTG
Case Scenario Presentation

Demonstrate knowledge of dashboard function through participation with ARS

Demonstrate knowledge of data drill down through participation with ARS

Discuss the relationships between data definitions and performance measures/quality metrics
Dashboard drilldown

Metric #12 ACE/ARB at Discharge

Documentation:

- The dashboard score is 90%, you were certain you were at 100%
- You click on the bar to drill down

Metric #12 ACE/ARB at Discharge

- You identify the patient that was “no” in the numerator

<table>
<thead>
<tr>
<th>Patient ID</th>
<th>Incl. in Numerator</th>
<th>LVEF %</th>
<th>Discharge Location</th>
<th>ACE Inhibitor - Discharge</th>
<th>ARB - Discharge</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>220971</td>
<td>No</td>
<td>35</td>
<td>Home</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>212306</td>
<td>Yes</td>
<td>20</td>
<td>Alive</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>212162</td>
<td>Yes</td>
<td>22</td>
<td>Home</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>212058</td>
<td>Yes</td>
<td>20</td>
<td>Home</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>212058</td>
<td>Yes</td>
<td>20</td>
<td>Home</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>212058</td>
<td>Yes</td>
<td>20</td>
<td>Home</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>212058</td>
<td>Yes</td>
<td>20</td>
<td>Home</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>212058</td>
<td>Yes</td>
<td>20</td>
<td>Home</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>212058</td>
<td>Yes</td>
<td>20</td>
<td>Home</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

ARS Question #1

Why is this patient a miss for this metric?

1. Ejection Fraction was too low
2. The site resubmitted to DQR over riding this submission
3. ACE is answered as “contraindicated”
4. ARB is answered as “no”
Metric #12 ACE/ARB at Discharge

Documentation:
• The dashboard score is 90%, you were certain you were at 100% - you click on the bar to drill down.

<table>
<thead>
<tr>
<th>Metric #12 ACE/ARB at Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation:</td>
</tr>
<tr>
<td>• The dashboard score is 90%, you were certain you were at 100% - you click on the bar to drill down.</td>
</tr>
</tbody>
</table>

Why is this patient a miss for this metric?
1. Ejection Fraction was too low
2. The site resubmitted to DQR over riding this submission
3. ACE is answered as “contraindicated”
4. ARB is answered as “no”

Dashboard drilldown
Metric #27- Excessive GP IIb/IIIa

Documentation:
• Presents with symptoms of ACS
• ECG - STEMI - positive Troponin
• To cath lab for primary PCI
• GP IIb/IIIa administered - Eptifibatide 2mcg/kg/min
• Outcomes Report - 25% Excessive dosing GP IIb/IIIa
ARS Question #2

What specifically should this site look for to determine why this patient is included in the excessive dosing metric?

1. Creatinine value
2. Weight
3. Creatinine clearance
4. Sex

Metric #27- Excessive GP IIb/IIIa

Documentation:
- ECG- STEMI-positive Troponin-primary PCI
- GP IIb/IIIa administered-Eptifibatide 2mcg/kg/min
- Outcomes Report-25% for Metric #27

What specifically should this site look for to determine why a patient is included in the excessive dosing metric?

1. Creatinine value
2. Weight
3. Creatinine clearance
4. Sex

Dashboard drilldown
Metric #17- Reperfusion Therapy

Documentation:
- Presents with symptoms of ACS-STEMI
- To cath lab for primary PCI
- Diagnostic cath only due to coronary anatomy
- Consulted for CABG- denied-poor candidate
- Returned to cath lab for successful PCI
ARS Question #3

There are several issues with this case. Which issue caused this patient to not meet the Reperfusion metric?

1. PCI Indication
2. Primary PCI
3. Arrival to First Device time
4. PCI reason for delay
Dashboard drilldown
Metric #15- Time to Primary PCI Compare

Documentation:

- Facility enters data- ACTION Registry-GWTG & CathPCI
- Cardiologists are asking why the two registries have different times for the D2B metric
- The metrics appear to measure in the same manner
  - arrival time or subsequent ECG time as “door” time
  - first device activation time as the “device” time
  - non-system reasons for delay

ARS Question #4

Do these registries calculate the D2B time in different manners?

1. No
2. Yes
Dashboard drilldown
Metric #15 & #19- Time to Primary PCI/transfer

Documentation:
• Reviewing your data & noted a patient missing from both D2B metrics
• Metric #15 Proportion of STEMI patients receiving primary PCI <90 minutes & Metric #19 Time from ED arrival at STEMI referral facility to Primary PCI at STEMI receiving facility among transferred patients
• Patient transferred in- ECG negative - positive Troponin
• STEMI ECG 15 min. after arrival to your facility
• To cath lab for primary PCI

ARS Question #5

Which door to balloon metric should this patient be included in?

1. Metric #15 Proportion of STEMI patients receiving primary PCI <90 minutes (D2B)
2. Metric #19 Time from ED arrival at STEMI referral facility to Primary PCI at STEMI receiving facility among transferred patients (D2B transfer in)
3. Neither

Metric #15 & 19

Documentation:
• Patient transferred in- ECG negative - positive Troponin
• STEMI ECG 15 min. after arrival to your facility
• To cath lab for primary PCI

Which door to balloon metric should this patient be included in?

1. Metric #15 Proportion of STEMI patients receiving primary PCI <90 minutes (D2B)
2. Metric #19 Time from ED arrival at STEMI referral facility to Primary PCI at STEMI receiving facility among transferred patients (D2B transfer in)
3. Neither
Dashboard drill down
Metric #18 Door in Door out

Documentation:
- DIDO Metric #18- R4Q 61-67 min. (median)
- Primary PCI <90 min transfer in #19- R4Q 119-136 min.
- Both are higher than the registry median

ARS Question #6

How would you interpret the breakdown in times?

1. DIDO is too long
2. Transport time is too long
3. Arrival to device time is too long

Metric #15 & 19

Documentation:
- DIDO Metric #18- 61-67 min. (median)
- Primary PCI <90 min transfer in- 119-136 min.
- Both are higher than the registry median

How would you interpret the breakdown in times?

1. DIDO is too long
2. Transport time is too long
3. Arrival to device time is too long
Outcomes Report
US Benchmarking in report

Documentation:

Outcomes Report:
• Executive Summary-R4Q: ASA at arrival
  – My hospital 100%
  – US hospital median is 99.4%
  – US Hospital 90th Pctl 100%
• Detail line 1009-
  – My hospital 100%
  – US hospital R4Q 98.2%
  – US Comparison R4Q 98.2%

ARS Question #7

What has caused the discrepancy?

1. The 2 values are not both median
2. One aggregates by hospital the other by patient
3. There is no discrepancy
4. The discrepancy falls within acceptable statistical variance
Dashboard drill down
Metric #28 Revascularized patients discharged on ADP receptor inhibitors

Documentation:

- In reviewing your Outcomes report
- Q1 2012 noted drop to 79.5%
- 58/73 received ADP
- 15 did not receive ADP

Metric #28 Revascularized patients discharged on ADP receptor inhibitors
- Opened drill down, exported into Excel spreadsheet
- Filtered for Numerator column-No’s
- Noted all CABG- none received ADP

ARS Question #8

Should these patients be included in the denominator for ADP receptor inhibitor at discharge for revascularized patients?

1. No
2. Yes
Metric #28 Revascularized patients discharged on ADP receptor inhibitors

Documentation:
- In reviewing your Outcomes report
- Q1 2012 noted drop to 79.5%
- 58/73 received ADP
- 15 did not receive ADP
- Noted all CABG- none received ADP

Should these patients be included in the denominator for ADP receptor inhibitor at discharge for revascularized patients?
1. No
2. Yes

Dashboard drill down
Metric #22 Door to ECG

Documentation:
- In reviewing your Outcomes report:
- Q3 2012 noted 56.5%
- 26/46 ECG within 10 minutes
- 20 did not meet the timeline

ARS Question #9

The R4Q is 51.8%. Should this site be concerned about these values?
1. No
2. Yes
Dashboard drill down
Metric #22 Door to ECG

Documentation:
- Q3 2012 noted 56.5%
- 26/46 ECG within 10 minutes
- 20 did not meet the timeline

<table>
<thead>
<tr>
<th>Door to 1st ECG in minutes</th>
<th>No Hospital</th>
<th>US Hospitals 50th Pct</th>
<th>US Hospitals 90th Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.2</td>
<td>66.7%</td>
<td>84.4%</td>
<td></td>
</tr>
</tbody>
</table>

Proportion of all patients that received an ECG within 10 minutes of arrival at participating hospital. [Detail Live:1072]

The R4Q is 51.8%. Should this site be concerned about these values?
1. No
2. Yes