Eliminating Disparities in Outcomes in ACS: Perspectives from the TIMI Group

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The following relationships exist related to this presentation:

– Research Grant Support: Accumetrics, AstraZeneca, GSK, Intekrin, Merck, Takeda
- Advisory Board: BMS/Sanofi, Novartis (funds donated to charity)
- Clinical Advisor and equity: Automedics Medical Systems
MISSION:

The TIMI Study Group organized in 1984 by Eugene Braunwald, MD at Brigham and Women’s Hospital, Boston, MA, is committed to advancing the knowledge and care of patients suffering from acute coronary syndromes by performing clinical research.
TIMI TRIALS
1984-2010

56 ACS Trials (more than 45 completed)

- ACS
  - STEMI: n=25
  - PCI: n=4
  - NSTEMI/UA: n=22
  - Sec. Prevention: N=3
  - DM: n=1
  - Afib: n=1

- 300,000 Pts enrolled to date
- 4000 Hospitals worldwide
- 8000 Investigators worldwide
- 52 Countries
- 6 Continents

TIMI BIBLIOGRAPHY - >500 PUBLICATIONS IN PEER REVIEWED JOURNALS
PROJECT ORGANIZATION OF MAJOR COMPONENTS

STEERING:
- Scientific Design
- Primary/Secondary Goals

OPERATIONS: Project Management
(Sponsor/TIMI/CRO Group)

Independent Statistical Group
Data Safety Board
Study Chairman

Clinical Sites
- Site Management – North America
- Site Identification – Worldwide – NLI
- Training
- Enrollment
- Medical Hotline
- SAEs
- Protocol Questions
- Manual of Operations

CEC
- Angiography
- ECG
- Hematology
- Biomarkers
- Holter
- Echocardiograph
- MRI

Core Labs
Randomization/Drug
- CRF Flow
- Analyses
- CRO

Database
- CRF Flow
- Analyses
- CRO

Monitoring
Publications
Racial differences in the management of unstable angina: Results from the multicenter GUARANTEE registry

% of Patients with positive clinical criteria who underwent catheterization

% of total population having positive criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Non-white</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive AHCPR Criteria</td>
<td>44%</td>
<td>51%</td>
</tr>
<tr>
<td>Positive TIMI IIIB Criteria</td>
<td>61%</td>
<td>63%</td>
</tr>
</tbody>
</table>

Clinical Criteria for Catheterization

Racial Differences in Treatment

- Is it Bias?
- Is it a hospital/system problem?
The Effect of Race and Sex on Physicians' Recommendations for Cardiac Catheterization

“Patients” experiencing symptoms of heart disease

Results: Referral for cardiac catheterization according to race

<table>
<thead>
<tr>
<th>Race</th>
<th>Mean Referral Rate %</th>
<th>Odds Ratio (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>90.6</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>84.7</td>
<td><strong>0.6 (0.4-0.9)</strong></td>
<td>0.02</td>
</tr>
</tbody>
</table>

Racial and Ethnic Disparities in Care
The Perspectives of Cardiologists

- Only 34% agreed that there were disparities in care overall in the US healthcare system.
- Only 12% felt these disparities existed in their own hospital setting.
- Only 5% thought they existed among their own patients.

## Worse Care at Hospitals Treating High % Minority Populations

<table>
<thead>
<tr>
<th>Hospital % Minority</th>
<th>AMI* (n=1963)</th>
<th>Pneum* (n=2560)</th>
<th>HF** (n=2662)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5%</td>
<td>90.4 (87.5, 95.0)</td>
<td>79.5 (74.9, 84.5)</td>
<td>70.3 (59.4, 83.3)</td>
</tr>
<tr>
<td>5-10%</td>
<td>90.1 (87.5, 95.1)</td>
<td>78.5 (73.9, 83.5)</td>
<td>73.3 (64.6, 85.1)</td>
</tr>
<tr>
<td>10-20%</td>
<td>90.2 (87.5, 95.1)</td>
<td>77.7 (72.8, 83.1)</td>
<td>73.6 (64.1, 85.5)</td>
</tr>
<tr>
<td>&gt;20%</td>
<td>88.5 (84.4, 94.3)</td>
<td>75.0 (70.2, 80.1)</td>
<td>69.7 (58.2, 82.6)</td>
</tr>
</tbody>
</table>

*For all comparisons between hospital groups for AMI and CAP (p < 0.01)

** For all comparisons between hospital groups for HF p=0.1835

*Mehta R. et al JAMA. 2008;300 (16):1897-1903*
Risk for Pay 4 Performance (P4P)
Financial Penalties

*Could Exacerbate Care Disparities*

<table>
<thead>
<tr>
<th>% AA Patients at Hospital</th>
<th>AMI</th>
<th>CAP</th>
<th>HF</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5%</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5-10%</td>
<td>1.63 (1.60-1.65)</td>
<td>1.24 (1.22-1.25)</td>
<td>1.03 (1.02-1.05)</td>
</tr>
<tr>
<td>10-20%</td>
<td>1.72 (1.69-1.75)</td>
<td>1.33 (1.31-1.35)</td>
<td><strong>1.06 (1.04-1.08)</strong></td>
</tr>
<tr>
<td>&gt; 20%</td>
<td>2.91 (2.87-2.96)</td>
<td>3.19 (3.15-3.23)</td>
<td>1.68 (1.65-1.71)</td>
</tr>
</tbody>
</table>

*For all comparisons to hospitals treating ≤ 0-5% AA (p < 0.001 [adjusted])
** p=0.026

N=2,785 hospitals

Mehta R. et al JAMA. 2008;300 (16):1897-1903
Improving Outcomes in ACS

- Clinical trials with evidence for benefit of Rx
- Education: publications, web
- Guidelines
- Registries to Monitor use of Rx
- Quality Improvement
  - Standardized tools/critical pathways
  - Performance Improvement programs
All-Cause Death or Major CV Events in All Randomized Subjects

Pravastatin 40 mg (26.3%)
Atorvastatin 80 mg (22.4%)

16% RR
(P = 0.005)


A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines

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*The opinions expressed in this article should not be construed as necessarily representing an official position of the US Department of Health and Human Services, the Agency for Healthcare Research and Quality, or the US Government, by whom M. Hand is employed.

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### TIMI III Registry

<table>
<thead>
<tr>
<th></th>
<th>Pre-Guideline</th>
<th></th>
<th>Post-Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>No. Patients</td>
<td>1678</td>
<td>1640</td>
<td>1788</td>
</tr>
<tr>
<td><strong>On Admission</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASA</td>
<td>82</td>
<td>77</td>
<td>84</td>
</tr>
<tr>
<td>Heparin</td>
<td>63</td>
<td>50</td>
<td>66</td>
</tr>
<tr>
<td>Beta blockers</td>
<td>41</td>
<td>35</td>
<td>53</td>
</tr>
</tbody>
</table>

**Comparing Pre- to Post-:**

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td></td>
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<tr>
<td>ASA</td>
<td>.30</td>
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</tr>
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<td>Heparin</td>
<td>.13</td>
<td>.001</td>
</tr>
<tr>
<td>Beta blocker</td>
<td>.001</td>
<td>.001</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scirica BM et al. Crit Path Cardiol 2002;1:150-158
- Standardized protocols
- Goal: optimize care
- Emerging Evidence – Pathways work:
  - CHAMP
  - Guidelines Applied in Practice (GAP)
  - AHA “Get with the Guidelines” program

www.critpathcardio.com
## Key Elements to Quality Improvement: Why Do Some Hospitals Succeed?

<table>
<thead>
<tr>
<th>Key Elements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to current and accurate data on treatment and outcomes</td>
<td></td>
</tr>
<tr>
<td>Physician champion, support among clinicians</td>
<td></td>
</tr>
<tr>
<td>Stated goals</td>
<td></td>
</tr>
<tr>
<td>Administrative support</td>
<td></td>
</tr>
<tr>
<td>Use of preprinted orders, care maps</td>
<td></td>
</tr>
<tr>
<td>Use of data to provide feedback</td>
<td></td>
</tr>
</tbody>
</table>

GAP Initiative: Adherence Improves With Tool Use

Early Quality Indicators and Standard Admission Orders

<table>
<thead>
<tr>
<th></th>
<th>Preintervention</th>
<th>Postintervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin</td>
<td>343</td>
<td>308</td>
</tr>
<tr>
<td>β-Blocker</td>
<td>213</td>
<td>174</td>
</tr>
<tr>
<td>LDL-C</td>
<td>131</td>
<td>165</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of Ideal Patients</th>
<th>Preintervention</th>
<th>Postintervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin</td>
<td>81</td>
<td>86</td>
</tr>
<tr>
<td>β-Blocker</td>
<td>65</td>
<td>73</td>
</tr>
<tr>
<td>LDL-C</td>
<td>64</td>
<td>64</td>
</tr>
</tbody>
</table>

P = .001

P = .004

Get With The Guidelines
ACTION QI Tool Development

- Quarterly Feedback reports
- Individualized Gap analysis
- On-line Real time summaries
- QI tool kits
- D2B tool kits
- Monthly Web-casts
- Regional Group Meetings
- TAKE ACTION™ Campaign
NSTEMI Discharge Medications

- ASA: 87%
- Beta Blocker: 85%
- ACE-I or ARB: 83%
- Lipid Lowering Agent: 88%
- Clopidogrel: 74%

ACTION Registry-GWTG DATA: July 1, 2008 – June 30, 2009
NSTEMI Acute Medication Overdosing Trends

* Infusion (> 15 units/kg/hr) or bolus (> 70 units/kg)
# Initial dose (> 1.05 mg/kg) or total 24 hr dose (> 10 mg over recommended)

ACTION Registry-GWTG DATA: July 1, 2008 – June 30, 2009
Keeping PACE: Patient-centered ACS Care Education
A Performance Improvement Educational Opportunity to Enhance ACS Patient Care

Advisory Board | CME/CE Information

If you are ready to participate in an educational initiative that will help you to improve the care of your patients with Acute Coronary Syndrome (ACS), and if you treat patients in a hospital that collects performance data through the American College of Cardiology (ACC)-NCDR® ACTION Registry®-GWG™, you have an unique opportunity to participate in this innovative performance improvement (PI) educational initiative. This free activity will provide physicians with 20 AMA PRA Category 1 Credits™ and 20 contact hours for nursing professionals. In addition, physicians who successfully complete the initiative are eligible to claim American Board of Internal Medicine (ABIM) Maintenance of Certification Part IV credit.

Keeping PACE: Patient-centered ACS Care Education (Keeping PACE) marries the power of the ACC-NCDR® ACTION Registry®-GWG™ to an educational design that demonstrates practice improvement and optimal care of your patients with ACS, utilizing registry data reports to assess baseline practice patterns, and therefore, eliminating the time and need to obtain your own data through chart pulls. As a participant in this activity, you will be engaged in an evidence-based performance improvement CME/CE plan which will include live activities and/or web-based activities.

Click here to be contacted when KEEPING PACE registration opens.
Click here to see if your hospital participates in the ACC-NCDR® ACTION Registry®-GWG™

Original Release Date: April 15, 2010
Expiration Date: July 31, 2011

Overview

This performance improvement activity will be divided into three stages:
**STEP 1:** Pull 5 random patient files

**STEP 2:** Use Med-IQ data collection forms or enter data online

**STEP 3:** Self-assess results of 3 benchmark areas (1, 2, and/or 3) vs. national standards and peers (other PI participants)

**PERFORMANCE IMPROVEMENT PARTICIPANT EXPERIENCE**

- Participate in educational activity relevant to benchmark areas 1, 2, and/or 3
- Earn up to 1.5 CME credits for completing educational activities
- 3-month commitment

**STEP 1:** Pull 5 random patient files

**STEP 2:** Use Med-IQ data collection forms or enter data online

**STEP 3:** Identify additional barriers

**STEP 4:** Self-assess results vs. pre-results, national standards, and peers

**PI Stage A**
5 credits earned

**PI Stage B**
5 credits earned

**PI Stage C**
5 credits earned + 5 credits for program completion

**PI** = performance improvement; **CME** = continuing medical education.

**FIGURE 1.** Performance improvement process.
Personalized And Targeted QI

Registry SITES

STANDARD QI FEEDBACK

Individualized GAP Analysis

Top 3 Quality or Safety Targets

Targeted Data Reports

Educational Modules and QI Tools

EVALUATION

- Composite Metrics of Quality and Safety
- Benchmarks Achieved
- Surveys assessing implementation and usability
Eliminating Disparities in Outcomes in ACS

• Evidence suggests the issue is not bias of MDs, but rather a “systems” problem.

• Registries, Quality Improvement Initiatives can improve care for all patients.