When Minutes Count...

Annual Meeting: Clinical Outcomes Assessment Program
May 16, 2006

Presented by: Christi McCarren, Administrator
Cardiovascular Services, MultiCare Health System
Expeditious restoration of flow in an obstructed coronary artery after the onset of symptoms is a key determinant of short and long term clinical outcomes in AMI patients.

Prompt aspirin administration results in a 15% reduction of vascular events.

Use of beta blockers reduces AMI mortality in the first week by 13% and long-term mortality by 23%.

Our Challenge and Objectives...

- to significantly improve the outcome of people experiencing heart-related symptoms
- to increase the accuracy and effectiveness of the treatment provided
- to reduce the time to revascularization
- to increase public awareness
Team Membership Was Guided by the “20 Foot Rule”

♥ Staff: TG and AH Nursing (ED, Cath Lab, Cardiac Units), Pharmacy, IV Therapy, Imaging, Hospital Supervisors, Telecommunications

♥ Physicians: Community Cardiologists representing both major groups, TG Hospitalists, TG and Allenmore Emergency Room Physicians

♥ Management
 Desired Outcomes

♥ Decrease fragmentation of care; facilitate hand-offs
  - Understand old process
  - Create new, standardized process
  - Develop roles and expectations for all team members

♥ Increase compliance with ACC/AHA Practice Guidelines

♥ Identify staff education needs

♥ Design a successful implementation process

♥ Identify clinical and operational metrics to gauge progress and successful implementation
Baseline Data Identified Process Opportunities

- Patient Arrives at ED: 00:00
- STEMI Diagnosed: 13 min
- Cardiologist Called: 24 min
- Cardiologist Arrives in ED: 34 min
- Cath Lab Team Activated: 77 min
- Procedure Initiated/ Balloon Inflated: 112 min

Average “Door to Balloon” Time = 112 minutes
New Streamlined Process Developed

- **Patient Arrives at ED**: 00:00
- **Heart Attack Diagnosed**: 13 min
- **Cardiologist Called**: 24 min
- **Cardiologist Arrives in ED**: 34 min
- **Cath Lab Team Activated**: 77 min
- **Procedure Initiated/Balloon Inflated**: 112 min

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- **Patient Arrives at ED**: 00:00
- **STEMI Diagnosed**: 5 min
- **Cath Lab Team Activated**: 6 min
- **Cardiologist Called**: 10 min
- **Cardiologist & Cath Lab Team Arrive**: 40 min
- **Procedure Initiated/Balloon Inflated**: 60 min
Patient presents with chest pain

ST segment elevation?

YES

Transport to hospital with cardiac cath lab

NO

Transport to hospital providing cardiac care

00:00 min

Upon arrival
  • ED Chest Pain Nursing Triage Protocol (Non-EMS patients)
  • ECG within 5 minutes of hospital arrival; CXR
  • Registration & Admit process initiated

00:05 min

• ED MD verifies STEMI
• “Code STEMI” activated (ED ESR)
• CCL O/C team activated (CV SSU)
• Text page to O/C Cardiologist via answering service web site: “STEMI @ TG”
• ED MD discusses treatment with pt
• STEMI protocol initiated

00:10 min

If call not returned within 5 min, ED ESR repeats text page noting “STEMI @ TG”

00:15 min

If call not returned within 5 min, alternate cardiology group paged

00:30 min

Cardiologist/O/C team arrives in CCL; Notifies ED to transport

00:40 min

Cardiac RN/ED EST transport patient to CCL

00:50 min

Cardiologist obtains consent for treatment
  O/C team sets up room
  CCL RN monitors patient

00:60 min

Procedure initiated

Flow/Perfusion established
Step-by-Step, the process was defined

- Multiple supporting documents & tools created: clinical guideline, treatment algorithm, order set, med record, clinical pathway, treatment checklist, discharge checklist

- Team member roles and expectations were clarified

- Time intervals were established and monitored
Baseline: Average “Door to Balloon” Time = 112 minutes

Jul 2005 –April 2006:
Average Door to Perfusion Time = 72 minutes!!

A sustained 34% reduction
**Time to Treatment Results**

**July 2005 – April 2006**

Under 90 minutes 84% of the time. 2006 Goal: 90%
Under 60 minutes 26% of the time. 2006 Goal: 35%

New "Code STEM I"
Process initiated at Tacoma General and Allenmore, July 5, 2005

<table>
<thead>
<tr>
<th>Interval Averages (Goal): (n=50)</th>
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<tbody>
<tr>
<td>Admit to EKG (&lt;5)</td>
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<tr>
<td>Door to Transport (&lt;40)</td>
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<tr>
<td>Door to Stick (&lt;50)</td>
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<tr>
<td>Stick to Perfusion (&lt;10)</td>
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<tr>
<td>Door to Perfusion (&lt;60)</td>
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</tbody>
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Baseline Interval Averages (Goal): (n=50)
- Admit to EKG (<5)          4.5 minutes
- Door to Transport (<40)   37.5 minutes
- Door to Stick (<50)       56.5 minutes
- Stick to Perfusion (<10)  16.6 minutes
- Door to Perfusion (<60)   72.1 minutes

2005
- Under 90 minutes 78% 2006 Goal: 90%
- Under 60 minutes 22% 2006 Goal: 35%

2006
- Under 90 minutes 90% 2006 Goal: 90%
- Under 60 minutes 35% 2006 Goal: 35%

Minutes
Process Improvement Continues in 2006

2005
- Under 90 minutes, 81% of the time
- Under 60 minutes, 25% of the time

2006
- Under 90 minutes, 89% of the time
- Under 60 minutes, 28% of the time

Internal Goal = 90%
Internal Goal = 35%
**Time Variability Exists by Shift**

**Day Shift Interval Averages Goal:** (n=20)
- Admit to EKG (< 5) 3.5 min
- Door to Transport (<40) 27.1 min
- Door to Stick (<50) 44.8 min
- Stick to Perfusion (<10) 17.0 min
- Door to Perfusion (<60) 61.1 min

**Night Shift Interval Averages (Goal):** (n=12)
- Admit to EKG (< 5) 2.5 min
- Door to Transport (<40) 47.4 min
- Door to Stick (<50) 66.7 min
- Stick to Perfusion (<10) 16.7 min
- Door to Perfusion (<60) 84.9 min

**Evening Day Shift Interval Averages (Goal):** (n=17)
- Admit to EKG (< 5) 7.3 min
- Door to Transport (<40) 41.7 min
- Door to Stick (<50) 62.2 min
- Stick to Perfusion (<10) 16.2 min
- Door to Perfusion (<60) 77.4 min
Immediate feedback provided to all team members following each "Code STEMI"

TG Code STEMI
Tuesday, October 4, 2005 (0749)

Door to Balloon Time: 49 minutes

Interval times
- Door to EKG: 2 minutes; Goal: < 5 minutes
- Door to Transport: 21 minutes; Goal: < 40 minutes
- Door to Stick: 39 minutes; Goal: < 50 minutes
- Stick to Balloon/Flow: 10 minutes; Goal: < 10 minutes
- Door to Balloon: 49 minutes; Goal: < 60 minutes

Discussion: Great job!!! All interval targets met.
“STEMI-nators” of the week!!

Dr. Rusinko
Dr. Pugeda

TG Code STEMI
Wednesday, August 24
Door to Balloon Time: 46 minutes
Next Steps

♥ By end of second quarter, implement in-hospital Code STEMI.

♥ 2006 Year-end Goals
   - 90% of patients will achieve a door to perfusion time ≤ 90 minutes.
   - 35% of patients will achieve a door to perfusion time ≤ 60 minutes.
   - 10% improvement in door to perfusion time over baseline for in-house Code STEMI.
   - Develop and publish community-wide metrics in collaboration with EMS and other area hospitals.
**Pierce County AMI Metrics**

**Public**
- Symptom Recognition
  - Symptom onset to 9-1-1 activation

**EMS**
- Call to Medical System
  - Dispatch time to EMS arrival
- Pre-Hospital
  - Scene to depart time
  - Scene to hospital arrival
  - Documentation of 12 Lead ECG/MD Validation of STEMI
  - Aspirin provided
- Emergency Department
  - Door to ECG
  - Use of aspirin, beta blockers*, abciximab*, heparin, nitroglycerin

**Hospital Emergency Departments:**
- **Cardiac Cath Labs:**
  - Door to perfusion

**Inpatient Units:**
- Cardiovascular Inpatient Units
  - Discharge medication: aspirin, beta blockers, plavix, ACEI, statins
Welcome to the Inpatient Code Stemi Computer Based Learning Module.

This module will introduce and explain the MultiCare Health System Inpatient Code Stemi Process.

Are you ready?
Primary RN

1. Care for and Assess patient’s condition and level of pain. Connect them to the MRX monitor for continual EKG monitoring
2. Obtain baseline VS. Apply O2
3. Complete 12-lead EKG or find someone that can
4. Stay at bedside and give report to RRT team as to pt’s Hx and condition
5. Once Cardiovascular ICU Nurse arrives: Update them with Pt. information
6. Obtain STEMI packet and order set available on Unit Crash Cart
7. Assist CVICU RN in obtaining meds, IV equipment, taking or sending blood samples, and gurney for transfer to Cath Lab
8. Complete any charting necessary before Pt. is taken to Cath Lab

*Allenmore Hospital does not have a cardiovascular RN*
What is my role? (Rollover the images and study each role.)

Cardiologist

1. View EKG and confirm STEMI
2. Meet with Pt. if in house
3. Obtain Hx. And determine need for CXR and meds to be administered as detailed on STEMI order Set
4. Meet patient in cath Lab to discuss procedure and obtain medical Consent
5. Establish coronary reperfusion
6. Meet with family afterward to review pt. condition
Algorithm

Now let's study the **Tacoma General In-Patient Code STEMI Check List (Algorithm)**. What must you do once the Code Stemi is initiated? Who will respond, what is required and what results are expected?

Click here to view the **Tacoma General In-Patient Code STEMI Check List.**
(as of 4/19/06)
Print it or save it to your desktop.

Click here to view the **Allenmore Inpatient Code STEMI Check List.**
(as of 4/19/06)
Print it or save it to your desktop.
More information and Assessment

Take the Assessment if you’re ready!

Please take a few minutes to show your knowledge and understanding. **For this CD ROM version you’ll need to complete this assessment on paper.** See a representative from the ILD or refer to the inside of the Manager's Tool kit if you have one.

You may also go to the online version of this CBL module on mhsnet and take the electronic version of the assessment at your convenience. Your online quiz results will automatically be entered into Lawson. This assessment is “optional”, if you do not want to take it and would like to finish the module now, click EXIT.

If you would like more information click the blue button.
Inpatient Code STEMI
Rapid Response Team
Demonstration
Lessons Learned

♥ Clinicians are proud of the work they do.
♥ Staff and physician involvement and commitment is critical to success.
♥ Immediate feedback is key to achieving results.
♥ Developing documents and tools to support process change is imperative.
♥ Sustaining improvement requires continued vigilance, monitoring and feedback.
Questions???