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Hands-On Device Training for STEMI Programs

New activity this year!

• Located in the Great Hall Meeting Room, Section 3 which is across the hall from the registration tables

• Hands on demonstrations range from: Hypothermia, Life Vest, LV-Assist, OCT, & Radial PCI

• The Hands on Device room is open all day and sign up sheets are located in the Great Hall Meeting Room, Section 3

Afternoon Workshops

Please see the roman numerals and letters on your name tag for your workshop assignments. Roman numeral refers to first break out session from 3:30 p.m - 4:15 p.m. Workshop options and locations are:

- Workshop A: LV Assist Devices located in Ohio States Tradition Room, 2nd Floor
- Workshop B: Transradial PCI for STEMI and Beyond located in US Bank Conference Theater, 1st Floor
- Workshop C: Hypothermia in Cardiac Arrest located in Davis Foundation Interfaith Prayer and Reflection Room, 3rd Floor

Roman Numeral II refers to second break out session from 4:15 p.m - 5:00 p.m. Workshop options and locations are:

- Workshop A: Stem Cells located in Ohio States Traditions Room, 2nd Floor
- Workshop D: STEMI Case Presentations: From Field Transmission to Hospital Discharge located in US Bank Conference Theater, 1st Floor
Overview of STEMI Management in 2011

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Types of Heart Attack

Non-STEMI
• Non-ST-elevation myocardial infarction
• Partially blocked artery
• Decreased blood flow to a portion of the heart

STEMI
• ST-elevation myocardial infarction
• Completely blocked artery
• No blood flow to a portion of the heart
• Substantial risk of death and disability
• Critical need for quick reperfusion
  - Restoration of blood flow by reopening the blocked artery

Reperfusion Strategies for STEMI

Plan A: percutaneous coronary intervention (primary PCI)
• Mechanical means of restoring blood flow
  - Balloon angioplasty
  - Stents
• More effective
• Lower bleeding risk
• Available at only 25% of U.S. hospitals
• Treatment delays

Plan B: thrombolytics (fibrinolytics)
• Pharmacologic means of restoring blood flow
  - "Clot-busting" drugs
• Less effective
• Greater bleeding risk
• Widely available at U.S. hospitals

Reperfusion Recommendations

Ia IIb IIIa

STEMI patients presenting to a hospital with PCI capability should be treated with primary PCI within 90 minutes of first medical contact.

Ia IIIa IIb IIIb

STEMI patients presenting to a hospital without PCI capability and who cannot be transferred to a PCI center for intervention within 90 minutes of first medical contact should be treated with fibrinolytic therapy within 30 minutes of hospital presentation, unless contraindicated.

Barriers to Timely Reperfusion

• The patient
  - Failure to promptly recognize symptoms
  - Inability to seek medical attention

• Time to transport
  - Mandated delivery to the closest hospital, regardless of PCI capabilities
  - Long transport in rural areas

• Decision process on arrival
  - Use-boosting drugs vs. PCI
  - Off hours
  - Transfer to PCI facility

• Time to implement treatment strategy
  - Procedural factors
  - Team assembly

The Reality of Today’s Patients

• Not all STEMI patients call 9-1-1
• 30% of STEMI patients present to their local emergency department (ED)

• "Walk-in" patients hinder:
  - Registration
  - Quick triage to electrocardiograms (ECG) for diagnosis
  - ECG primary
  - Advance warning to activate hospital staff to prepare for reperfusion
How do we increase the number of patients with timely access to reperfusion therapy?

A Life-Saving Initiative

National, community-based initiative

Goals

- Improve quality of care and outcomes in heart attack patients
- Improve health care system readiness and response

STEMI Chain of Survival

The Uniqueness of Mission: Lifeline

- Mission: Lifeline will:
  * Promote the ideal STEMI systems of care
  * Help STEMI patients get the life-saving care they need in time
  * Bring together healthcare resources into an efficient, synergistic system
  * Improve overall quality of care

- The initiative is unique in that it:
  * Addresses the continuum of care for STEMI patients
  * Preserves a role for the local STEMI-referral hospital
  * Understands the issues specific to rural communities
  * Promotes different solutions/protocols for rural vs. urban/suburban areas
  * Recognizes there is no "one-size-fits-all" solution
  * Knows the issues of implementing national recommendations on a community level
Improving the System of Care for STEMI Patients

The Ideal STEMI System of Care

The Ideal Patient

- **Patients and the public:**
  - Recognize the symptoms of STEMI
  - Realize the importance of:
    - Activating emergency medical services (EMS) via 9-1-1 promptly
    - Getting treatment quickly
  - Are familiar with their local hospital's role in STEMI care
  - Understand the implications of inter-hospital transfer for PCI

- **The ideal system:**
  - Promotes culturally competent education efforts
  - Includes patient representatives on community planning coalitions
  - Provides coordinated and patient-centered care

The Ideal EMS

- **In an ideal system:**
  - Ambulances are equipped with 12-lead ECG machines
  - EMS providers are trained to:
    - Use and transmit 12-lead ECGs
    - Care for STEMI patients
    - Provide feedback on performance and compliance with guidelines
  - Standardized point-of-entry (POE) protocols define patient transport rules
  - When there is STEMI, the cath lab is activated promptly
  - Patients transported to a STEMI-referral hospital remain on the stretcher with EMS present pending a transport decision
  - When “walk-in” patients present to a STEMI-referral hospital and require primary PCI, activation of EMS occurs
  - Hospitals close the communication gap with EMS

The Ideal STEMI-Referral Hospital

- **In an ideal system:**
  - Pre-hospital ECG diagnosis of STEMI, ED notification and cath lab activation occurs according to standard algorithms
  - Algorithms facilitate:
    - A short ED stay for the STEMI patient
    - Transport directly from the field to the cath lab
  - Single-call systems from STEMI-referral hospitals immediately activate the cath lab
  - Primary PCI is provided as routine treatment for STEMI 24/7
  - STEMI-referring hospital’s administration puts their support in writing
  - A multidisciplinary team meets regularly to identify and solve problems
  - A continuing education program is designed and instituted
  - A mechanism for monitoring performance, process measures and patient outcomes is established

The Ideal STEMI-Receiving Hospital

- **In an ideal system:**
  - Pre-hospital ECG diagnosis of STEMI, ED notification and cath lab activation occurs according to standard algorithms
  - Algorithms facilitate:
    - A short ED stay for the STEMI patient
    - Transport directly from the field to the cath lab
  - Single-call systems from STEMI-referral hospitals immediately activate the cath lab
  - Primary PCI is provided as routine treatment for STEMI 24/7
  - STEMI-referring hospital’s administration puts their support in writing
  - A multidisciplinary team meets regularly to identify and solve problems
  - A continuing education program is designed and instituted
  - A mechanism for monitoring performance, process measures and patient outcomes is established

POE Protocol

- **In an ideal system:**
  - Standardized POE protocols dictate transport of STEMI patients directly to a STEMI-receiving hospital based on:
    - Specific criteria for risk
    - Contraindications to fibrinolysis
    - Proximity of the nearest PCI service
  - Patients presenting to a STEMI-referral hospital are treated according to standardized triage and transfer protocols
  - Incentives are provided to rapidly:
    - Treat STEMI patients in accordance with ACC/AHA guidelines
    - Transfer to a STEMI-receiving hospital for primary PCI using:
      - Reperfusion checklists
      - Standard pharmacological regimens and order sets
      - Clinical pathways
  - There is rapid and efficient data transfer, data collection and feedback
  - Integrated plans for return of the patient to the community for care are provided
Ohio State Experience

In 2006, Developed in-house Algorithm for STEMI Care

- Dedicated STEMI Hotline
- Overhead “STEMI Alert”
- Allows ED physician to activate cath lab
- In-house team assembles in cardiac catheterization lab immediately (MD’s, RN’s, RT’s, Pharmacy)
- Interventional Cardiology Team assembled within 20-25 minutes

“STEMI ALERT” Call Team Members

Cardiology MD’s
General Fellow
Interventional Fellow
Interventional Attending

In-House Physicians
Senior IM Resident
Cardio Admit Resident

In-House RN’s
2 Ross Charge Nurse
Admitting Floor Nurse

In-House Ancillary Staff
Respiratory Therapist
Pharmacist
Patient Care Associate

Non-PCI Hospital Treatment Recommendations

Non-PCI hospital patients should be treated with medical therapy alone. If medical therapy fails or is not appropriate, refer to a PCI facility for surgical intervention.

STEMI 2100 Q1 and Q 2 Times

First Medical Contact to Reperfusion Times