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STEAMI System of Care: Upland Hills Health
A Transferring Non-PCI Facility

Estimated ground transport time: 54 minutes
STEMI CARE as A Transfer Facility
Immediate transfer to a PCI-capable hospital for primary PCI is the recommended triage strategy for patients with STEMI who initially arrive at or are transported to a non–PCI-capable hospital, with an FMC-to-device time system goal of 120 minutes or less.*

Upland Hills Health Set a Goal to Achieve Reperfusion ≤ 90 Minutes
IMPLEMENTATION
START WITH “THE BASICS”

– Identify What is Within Your Control for achieving:
  • DOOR In to Door Out ≤ 30 MINUTES

– Follow a standardized STEMI Protocol
  • STEMI-TRANSFER BOX containing standardized protocol medications and transfer forms
  • STEMI QUALITY REPORT FORM

– Develop and monitor ongoing process measures
  • DOOR TO EKG
  • EKG to call for transport
  • Transport arrival to transport departure
  • Transport
  • Achieved Reperfusion
Measure the Process and Trend the Data
What our data revealed......

Yikes!
Our Data Revealed...

• Only 2 out of our 22 STEMI’S met the ≤ 90 minute goal

• We identified that air transport was not the fastest mode of transfer for us

• Our door to EKG Goal ≤ 5 minutes was not met; door to EKG to interpret average was 27 minutes

• Our process was not organized!
Defining the Timeline

• STARTED BY DETERMINING THE AVERAGE FOR TRANSFER TIMES

- GROUND Versus AIR

to the CATH LAB TIMES
STEMI DATA TIMELINE:
Determining ED Arrival To ED Departure Goal Times

Goal: < 90 min. to PCI Center

- In / Out the ED Door h:mm (Goal: < 30 min.)
- Air Time: Cold Start
- Transfer Time h:mm
- Air Time: Warm Start
- Arrival at St. Marys to Balloon Time h:mm

Goal: < 30 min. out of ED door.
System Delays

• Patient Insurance
  – Which PCI Center do we contact?

• Which nurse will go on the transport?

• Team-No sense of URGENCY!
Our Systems of Care Plan
Protocol Development: Develop a Standardized Process

- Develop a standardized department process for meeting process step goals:
  - RN triage patient immediately to room.
  - All patients arriving with chest pain will have an EKG performed within 5 minutes of arrival
    - Bedside EKG using GE Dash Monitor available in every exam room.
  - STEMI EKG to call for transport to be achieved < 5 minutes.
Protocol Development: Transport
Plan A and Plan B

• Transport
  – “Ground transport is the fastest method of transport from UHH Emergency Department to Madison PCI hospitals.”
  – Air transport will be used for transport when the patient is unstable or may require physician intervention.
  – Education of physicians and staff on this counter-intuitive finding.
Protocol Development

• Transport *continued:*
  – Determination of STEMI, Call to Cardiologist and Call to Transport must occur SIMULTANEOUSLY (walk in STEMI’s).
  
  – At UHH ground transport is faster so transport decisions should be left up to the transferring facility and not dictated by the receiving center without discussing the transfer and patient dynamics.
EMS Collaboration

- All EMS agencies transporting chest pain patients to UHH agree to remain in ER until the EKG is interpreted
  - If the interpretation of the EKG is a STEMI, the EMS crew that transported the patient into our ER will take the transfer.
• **EMS-No delays in transport:**
  - Leave patient on EMS gurney
  - Lights and Sirens
  - Sense of Urgency!
  - No Delays!
• Primary RN
   - Q. Which nurse will go? (Ground Transport).
   - A. The Primary RN for the patient will go on the transfer unless an ACLS transport RN is immediately available.
   - Primary RN takes responsibility for making the transfer move forward at every step.
   - Call for EMS crew: “STEMI Transfer with RN.”
   - Chest pain patients are admitted immediately to an exam room.
Protocol Development
Physicians

- Stick to the protocol
- No nonessential IV fluids
- Follow the Plan A and Plan B transfer plan
  - The transfer facility should be making the decision for the most rapid method of transport and not the receiving center
  - STEMI identification means *immediate* call to PCI Center.
Protocol Development
Team Accountability

• ED Team Collaboration
  – Response similar to a CODE BLUE or Trauma Activation.
  – Everyone has a role.
  – Everyone has to look for potential delays and intervene.
  – Call fast, act fast!

.................Time is Muscle!
Here at UHH.......

STEMI’s
are considered
a PRIORITY
and staffing adapts...
Achieving our best times

Our best time ever......

71 minutes
EMERGENCY SERVICES PERFORMANCE IMPROVEMENT STUDY
2013-15 LEVEL 1 HEART ATTACK PROGRAM:
ST ELEVATION MYOCARDIAL INFARCTION (STEMI)
EKG PERFORMED TO PHYSICIAN INTERPRETATION
GOAL OF COMPLIANCE: LESS THAN 10 MINUTES

Data collection began May 2013
Upland Hills Health - Dodgeville, Wisconsin
Emergency Department
AVERAGE DOOR TO BALLOON INFLATION
2006 - PRESENT

2015 data included a delayed time case due to a PEA arrest.
How Did We Achieve This?

- Pre-hospital EKG transmission.
- Notification of Cardiologist & Cath Lab prior to arrival.
- 20 minutes ED arrival to ED departure:
  - Repeat EKG, physician exam, and medication initiated with remainder given in route.
- Team collaboration and Team tools
- EMS ground transport & EMS collaboration.
- Quality review and feedback
Quality Indicator: STEMI Report Form

Date of ED Presentation: Time: Mode:
Staff: ___________________ ___________________ ___________________
                      ___________________ ___________________ ___________________

Arrival to ED EKG (Goal 5 min.): ___________________

EKG to Activation: ___________________

ED Arrival to ED Departure (Goal <30 min.): ___________________

Transport time: ___________________

Door to Balloon (Goal <90 min.): ___________________

Case Review:

Staff Comments:

Suggestions for Improvement:

Staff Case Review Follow-up Completed on: Date: ________________
Reviewed by ED Committee: Date: ________________

Reviewed, STEMI Coordinator Signature: ________________ Date: ________________
Reviewed, ED Director Signature: ________________ Date: ________________
Reviewed, ED Medical Director Signature: ________________ Date: ________________
Program PEARLS

- Develop realistic timeframes for the most resource intensive patient.
- Determine the mode of transportation that works for your facility.
- Coordination of your team.
- Continuous process improvement and ongoing education/ feedback to staff.
- STEMI’s need to be considered a priority and staffing adapts.
• Partnering with EMS:
  – Encourage technology upgrades to allow field transmission of 12 lead EKG’s.
  – Keep EMS agency in department for potential transfer.
  – Leave them on the gurney.
  – Encourage EMS to develop protocols that decrease scene time.
  – Encourage local EMS agencies to use saline locks attached to their IV lines.
Thank you!