



Central Ohio Trauma System

White Paper for Prehospital Transport and Emergency Treatment at Central Ohio Hospitals of Patients Experiencing ST-Elevation Myocardial Infarction (STEMI) Based on AHA/ACC STEMI Guidelines

COMMITTEE & WRITING MEMBERS

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This paper is updated from an earlier version (2006). Previous committee members are recognized for their original contributions to this work.

BACKGROUND ON THE CENTRAL OHIO TRAUMA SYSTEM'S STEMI WHITE PAPER

The Central Ohio Trauma System (COTS) is a regional consortium of emergency medical technicians, paramedics, physicians, nurses, data specialists, researchers, acute care hospitals, trauma centers and others working together to reduce injuries and save lives by improving and coordinating trauma care, emergency care, and disaster preparedness systems in Central Ohio. The purpose of the Central Ohio Trauma System (COTS) is to serve as the forum for addressing issues affecting the delivery of trauma/emergency healthcare services and injury prevention in central Ohio. COTS work is driven in one of two ways: (1) By issues and requests presented from participating stakeholders at the committee level; and/or (2) Directed to a committee by the COTS Board of Trustees based on a perceived community need. COTS is a voluntary, cooperative, self-regulatory organization with charitable, educational and scientific intent.

COTS convenes a Prehospital Committee on a bi-monthly basis whose membership comprises Central Ohio emergency department and EMS leadership. The concept for the original COTS STEMI White Paper was developed by the COTS Prehospital Committee in light of the ACC/AHA statement that ***“every community should have a written protocol that guides EMS system personnel in determining where to take patients with suspected or confirmed STEMI (2004)¹.”*** The COTS STEMI Task Force was subsequently created to address prehospital and transport considerations for patients experiencing STEMI. This updated version of the COTS STEMI White Paper encompasses previous concepts and also addresses additional factors including:

- The continued interest and commitment to improving STEMI care and patient outcomes in Central Ohio, as verbalized by local hospital, EMS and public health stakeholders, including the American Heart Association's *Mission Lifeline*;
- The opening of a new hospital in Franklin County in 2008;
- Updated guidelines for the care of STEMI patients published by the ACC/AHA in 2009;
- The 2009 upgrade of an existing Franklin County hospital's STEMI care capabilities to include PCI on a 24/7/365 basis;
- Requests from hospitals and EMS agencies in counties contiguous to Franklin County to participate in the COTS STEMI guidelines as a means of improving patient care; and
- The intent of the Central Ohio emergency medical community to establish a regional STEMI system of care, in order to reduce morbidity and mortality of patients with STEMI.

WHITE PAPER INTENT

This paper is a statement of what hospital, EMS and public health partners are doing to promote STEMI care in the Central Ohio region, and to document support for the highest standards of patient care as defined by the American College of Cardiology (ACC) and the American Heart Association (AHA). **This document is meant to serve as a resource for Central Ohio EMS agencies and receiving hospitals.** This paper describes local hospitals' abilities to care for STEMI patients so that EMS providers can make informed destination decisions for their patients. In addition, a brief summary of key AHA/ACC recommendations for prehospital and emergent hospital care of the STEMI patient are provided. This paper is also intended to document sample best practices for the care of STEMI patients. Ultimately, EMS agencies and hospitals have the sole responsibility of establishing protocols that address the optimal care of STEMI patients within in their jurisdiction. This White Paper is *not* intended to depict ongoing quality assurance aspects of STEMI care at individual institutions. This Paper is also not meant to mandate specific hospital destinations for every EMS STEMI patient. Just as is stated in the ACC/AHA *Focused Updates on STEMI Care (2009)*, these guidelines "attempt to define practices that meet the needs of most patients in most circumstances. The ultimate judgment regarding care of a particular patient must be made by the healthcare provider and patient in light of all the circumstances presented by that patient³."

This White Paper is based on the 2004, 2007 and 2009 ACC/AHA Guidelines and Focused Updates for STEMI care, and may not reflect the most recent literature^{1,2,3}. EMS medical directors, emergency department physicians and cardiologists bear the responsibility of staying current with recent publications, and for incorporating evidenced-based findings into their institution's practices and protocols.

AHA/ACC STEMI GUIDELINES

The ACC/AHA *Task Force on Practice Guidelines* issued a joint summary of guidelines for the management of ST-elevation myocardial infarction (STEMI) in early 2004¹. Updated guidelines---aka "focused updates"---were published in 2007 and 2009 by the ACC/AHA^{2,3}. According to the ACC/AHA, "unchanged recommendations from the previous iterations of the guidelines remain current policy³."

The ACC/AHA state that the morbidity and mortality rates associated with STEMI can be reduced significantly if people recognize the symptoms early, activate the EMS system, and reduce the time to definitive treatment. Recommendations in the ACC/AHA guidelines for STEMI patient care summarize both medical evidence and expert opinion. Definitions of the evidence levels are as follows¹:

- **Level A:** Data derived from multiple randomized clinical trials or meta-analyses.
- **Level B:** Data derived from a single randomized trial, or nonrandomized studies.
- **Level C:** Only consensus opinion of experts, case studies, or standard-of-care.

- **Class I:** Procedure or treatment *should be* performed or administered (evidence and/or general agreement supports that a given procedure or treatment is beneficial, useful, and effective)
- **Class IIa:** *It is reasonable* to perform procedure or administer treatment (additional studies with focused objectives needed).
- **Class IIb:** Procedure or treatment *may be considered* (additional studies with broad objectives needed; additional registry data would be helpful).
- **Class III:** Procedure or treatment *should not* be performed or administered because *it is not helpful and may be harmful* (no additional studies needed).

PREHOSPITAL STEMI CARE

Fundamental recommendations for prehospital providers in the care of patients experiencing STEMI as specified by the ACC/AHA STEMI Guidelines include the following.

- “Every community should have a written protocol that guides EMS system personnel in determining where to take patients with suspected or confirmed STEMI” (*Class I, Level of evidence: C*) [2004].
- “Dispatchers staffing 9-1-1 emergency enter EMS medical calls should have medical training, should use nationally developed and maintained protocols, and should have a quality improvement system in place to ensure compliance with protocols” (*Class I, Level of evidence: C*) [2004]. The protocols should include oral administration of non-enteric-coated aspirin 162 mg to 325 mg by bystanders while EMS is dispatched. The patient should be instructed to chew the aspirin dose by the bystander (*Class I, Level of evidence: C*) [2004].
- “All EMS first responders who respond to patients with chest pain and/or suspected cardiac arrest should be trained and equipped to provide early defibrillation” (*Class I, Level of evidence: A*) [2004].
- Supplemental oxygen should be administered to patients with arterial oxygen desaturation (SaO₂ less than 90 percent) (*Class I, Level of evidence: B*). It is reasonable to administer supplemental oxygen to all patients with uncomplicated STEMI during the first 6 hours (*Class IIa, Level of evidence: C*) [2004].
- **Prehospital 12-lead electrocardiograms should be performed by EMS [2007]. Prehospital 12-lead EKG should be transmitted to a receipt-capable hospital** (*Class IIa, Level of evidence: B*) [2004].
- Prehospital EMS providers should administer non-enteric-coated aspirin 162 mg to 325 mg to chest pain patients suspected of having STEMI, unless contraindicated or already taken by the patient (*Class I, Level of evidence: C*) [2004]. The patient should be directed to CHEW the aspirin dose.
- EMS providers should consider a pre-hospital dose of clopidogrel (Plavix) of at least 300 to 600 mg (*Class I, Level of evidence: C*) [2009]. The clopidogrel is given in addition to the aspirin dose.
- Morphine sulfate (2 to 4 mg IV with increments of 2 to 8mg IV repeated a 5- to 15- minute intervals) is the **analgesic of choice** for management of pain associated with STEMI (*Class I, Level of Evidence: C*) [2007]. Other analgesics such as fentanyl are also options based on the EMS agency protocol.

- Patients with ongoing ischemic discomfort should receive sublingual nitroglycerin (0.4 mg) every five minutes for a total of three doses, after which an assessment should be made about the need for intravenous nitroglycerin (*Level of evidence: C*) [2004].
 - Nitrates **should not** be administered to patients with systolic blood pressure less than 90 mm Hg or greater than or equal to 30 mm Hg below baseline, severe bradycardia (less than 50 bpm), tachycardia (more than 100 bpm), or suspected RV infarction (*Class III, Level of evidence: C*) [2004].
 - Nitrates **should not** be administered to patients who have received a phosphodiesterase inhibitor for erectile dysfunction within the last 24 hours (48 hours for tadalafil) (*Class III, Level of evidence: B*) [2004].
- EMS should strive for a scene time of less than 15 minutes with all STEMI patients.
- Destination preference should be to PCI-capable over non-PCI-capable hospitals for transport times less than 30 minutes.
- Destination preference should be to PCI-capable over non-PCI-capable hospitals for Patients with STEMI who have cardiogenic shock (*Level of evidence: A for patients less than 75 years of age, and Level of Evidence: B for patients greater than 75 years of age*) [2004].
- EMS may consider transfer time and distance factors in consideration of hospital destination. Aeromedical transport is a valid option for emergency transport of STEMI patients to PCI-capable hospitals.
- EMS providers are encouraged to transport all current medications (“bag of pills”) with the patient so that hospital medical care providers can have a clear understanding of current treatment regimens.

HOSPITAL STEMI CARE

- Each community should develop a STEMI system of care that follows standards at least as stringent as those developed for the AHA’s national initiative, *Mission: Lifeline*. These include the following in order to evaluate outcomes and quality improvement data from a regional perspective (*Class I, Level of evidence: C*)[2009]:
 - Ongoing multidisciplinary team meetings that include representatives from:
 - Emergency medical services,
 - Non-PCI-capable hospitals/STEMI referral centers,
 - PCI-capable hospitals/STEMI receiving centers,
 - The American Heart Association,
 - The Central Ohio Trauma System, and
 - Other interested stakeholders.
 - A process for prehospital identification of STEMI and EMS destination protocols directly to STEMI receiving centers if possible;
 - Rapid activation of interventional services; and
 - Timely transfer protocols from STEMI referral centers for patients who are:
 - Primary-PCI candidates,

- Ineligible for fibrinolytic drugs, AND/OR
 - In cardiogenic shock.
- The choice of initial STEMI treatment should be made by the emergency medicine physician on duty based on a predetermined, institution-specific, written protocol that is a collaborative effort of cardiologists (both those involved in coronary care unit management and interventionalists), emergency physicians, primary care physicians, nurses, and other appropriate personnel. For cases in which the initial diagnosis and treatment plan is unclear to the emergency physicians or is not covered directly by the agreed-on protocol, immediate cardiology consultation is advisable (*Level of evidence: C*) [2004].
- STEMI Management (*Aspirin, Oxygen, Nitrates, Analgesia*) is the same as with the pre-hospital management.
- STEMI patients presenting to a hospital with PCI capability should be treated with primary PCI within 90 minutes of **first medical contact** as a systems goal (*Class I, Level of evidence: A*) [2007].
 - ◆ **NOTE: First medical contact** is defined within the COTS region as the time that the patient is first seen by EMS (as documented on the EMS run sheet) OR the time that the patient self-presents for care in an emergency department.
 - It is reasonable to start treatment with glycoprotein IIb/IIIa receptor antagonists (abciximab [*Class IIa, Level of Evidence: A*], tirofiban or eptifibatide [*Class IIa, Level of Evidence: B*]) at the time of primary PCI (with or without stenting) in selected patients with STEMI [2009].
 - The use of glycoprotein IIb/IIIa receptor antagonists (as part of a preparatory pharmacological strategy for patients with STEMI before their arrival in the cardiac catheterization laboratory for angiography and PCI) is uncertain (*Class IIb, Level of evidence: B*) [2009].
 - A loading dose of thienopyridine is recommended for STEMI patients for whom PCI is planned. Regimens should be one of the following:
 - At least 300 to 600 mg of clopidogrel should be given **as early as possible** before or at the time of primary or non-primary PCI (*Class I, Level of evidence: C*) if not given in the pre-hospital setting.
 - Prasugrel 60 mg should be **given as soon as possible** for primary PCI (*Class I, Level of evidence: B*) [2009].
 - ◆ **NOTE:** In STEMI patients with a prior history of stroke and transient ischemic attack for whom primary PCI is planned, prasugrel is not recommended as part of a dual-antiplatelet therapy regimen (*Class III, Level of evidence: C*) [2009].
 - For patients proceeding to primary PCI who have been treated with aspirin and a thienopyridine, recommended supportive anticoagulant regimens include the following.
 - For prior treatment with unfractionated heparin (UFH), additional boluses of UFH should be administered as needed to maintain therapeutic activated clotting time levels, taking into account whether GP IIb/IIIa receptor antagonists have been administered (*Class I, Level of evidence: C*) [2009].
 - Low molecular weight heparin (LMWH) is an acceptable alternative to UFH as ancillary therapy for patients less than 75 years of age who are receiving fibrinolytic therapy, provided that significant renal dysfunction (serum creatinine greater than

- 2.5 mg/dL in men or 2.0 mg/dL in women) is not present (*Class IIb, Level of evidence B [2004]*).
- Bivalirudin is useful as a supportive measure for primary PCI with or without prior treatment of UFH (*Class I, Level of evidence: B*) [2009].
 - In STEMI patients undergoing PCI who are at high risk of bleeding, bivalirudin anticoagulation is reasonable (*Class I, Level of evidence: B*) [2009].
- STEMI patients presenting to a hospital without PCI capability and who cannot be transferred to a PCI center and undergo PCI within 90 minutes of **first medical contact** should be treated with fibrinolytic therapy within 30 minutes of hospital presentation as a systems goal unless fibrinolytic therapy is contraindicated (*Class I, Level of evidence: B*) [2007].
 - For STEMI patients undergoing nonprimary PCI, the following regimens are recommended:
 - If the patient has received fibrinolytic therapy and has been given clopidogrel, clopidogrel should be continued as the thienopyridine of choice (*Class I, Level of evidence: C*) [2009].
 - If the patient has received fibrinolytic therapy without a thienopyridine, a loading dose of 300 to 600 mg of clopidogrel should be given as the thienopyridine of choice (*Class I, Level of evidence: C*) [2009].
 - If the patient did not receive fibrinolytic therapy, either a loading dose of 300 to 600 mg of clopidogrel should be given or, once the coronary anatomy is known and PCI is planned, a loading dose of 60mg of prasugrel should be given promptly and no later than 1 hour after the PCI. (*Class I, Level of evidence: B*) [2009].
 - ◆ **NOTE:** In STEMI patients with a prior history of stroke and transient ischemic attack for whom primary PCI is planned, prasugrel is not recommended as part of a dual-antiplatelet therapy regimen (*Class III, Level of evidence: C*) [2009].
 - Patients with STEMI who have cardiogenic shock and are less than 75 years of age should be brought immediately or secondarily transferred to facilities capable of cardiac catheterization and rapid revascularization (percutaneous coronary intervention [PCI] or coronary bypass graft surgery [CABG]) if it can be performed within 18 hours of onset of shock (*Level of evidence: A*) [2004].
 - Patients with STEMI who have contraindications to fibrinolytic therapy should be brought immediately or secondarily transferred promptly (i.e., primary-receiving hospital door-to-departure time less than 30 minutes) to facilities capable of cardiac catheterization and rapid revascularization (PCI or CABG) (*Level of evidence: B*) [2004].
 - A strategy of coronary angiography with intent to perform PCI (or emergency CABG) is recommended for patients who have received fibrinolytic therapy and have any of the following:
 - Cardiogenic shock in patients less than 75 years who are suitable candidates for revascularization (*Class I, Level of evidence: B*) [2007].
 - Severe congestive heart failure and/or pulmonary edema (Killip class III) (*Class I, Level of evidence: B*) [2007].
 - Hemodynamically compromising ventricular arrhythmias (*Class I, Level of evidence: C*) [2007].

Readers should consult the full version of the AHA/ACC 2004, 2006 and 2009 guidelines for a complete summary of recommendations.

CENTRAL OHIO HOSPITALS’ PRIMARY PCI CAPABILITY

Franklin County Hospitals with Primary Percutaneous Coronary Intervention (PCI)

The following Columbus, Ohio area hospitals have primary PCI capabilities: Doctors Hospital, Grant Medical Center, Mount Carmel East, Mount Carmel St. Ann’s, Mount Carmel West, The Ohio State University Medical Center and Riverside Methodist Hospital. These hospitals have multidisciplinary teams operating under a guideline-based, written STEMI protocol and are committed to taking STEMI patients to the cardiac catheterization lab, 100% of the time for PCI as opposed to using fibrinolytics (unless contraindicated). These hospitals are committed to meeting the ACC/AHA goal of first medical contact to balloon within 90 minutes of STEMI patients’ arrival to the hospital. *Appendix A* presents additional hospital-specific details and contact information about these primary PCI hospitals in Franklin County.

Franklin County Hospitals without Primary PCI

Dublin Methodist Hospital and The Ohio State University Hospitals East (OSUE) are “non-primary PCI facilities” meaning that they do not provide interventional cath lab services for STEMI patients within their walls. Both hospitals have a protocol to care for STEMI patients and protocols to transfer STEMI patients to a PCI-capable facility. Both have multidisciplinary teams operating under a guideline-based, written STEMI protocol and are committed to transferring STEMI patients to a PCI-capable facility so PCI can be initiated within 90 minutes. Neither facility has plans to become a primary PCI facility in the near future. *Appendix B* provides specific details and hospital contacts for additional information about these two non-primary PCI hospitals in Franklin County, Ohio.

TABLE 1. FRANKLIN COUNTY HOSPITALS’ PCI CAPABILITIES.

Hospitals with PCI Capabilities	Hospitals without PCI Capabilities
Doctors Hospital Grant Medical Center Mount Carmel East Mount Carmel St. Ann’s Mount Carmel West The Ohio State University Medical Center Riverside Methodist Hospital	Dublin Methodist Hospital The Ohio State University Hospitals East

Hospitals in Counties Contiguous to Franklin County who Wish to Participate in These Regional Guidelines

An attestation was sent to Central Ohio county hospitals to gather STEMI-care capabilities of hospitals in the region. Fairfield Medical Center, Knox Community Hospital, Licking Memorial Health Systems, and Marion General Hospital have disclosed 24/7/365 PCI capabilities for STEMI patients. See *Appendix C* for STEMI care capabilities of Central Ohio county hospitals choosing to participate in this White Paper.

TABLE 2. PARTICIPATING CENTRAL OHIO HOSPITALS’ PCI CAPABILITIES.

Hospitals with PCI Capabilities	Hospitals without PCI Capabilities
Fairfield Medical Center Knox Community Hospital Licking Memorial Health Systems Marion General Hospital	Diley Ridge Medical Center Grady Memorial Hospital Madison County Hospital Memorial Hospital of Union County

CLOSING COMMENTS

The importance of timely re-perfusion for STEMI patients cannot be overstated. This White Paper seeks to address key concepts in optimizing care for STEMI patients in Central Ohio. It documents a commitment by the Central Ohio EMS and hospital community to deliver the highest standard of care possible to all STEMI patients. Cardiac health care providers are encouraged to review the full ACC/AHA STEMI Guidelines and to consider best options for patient care as they develop their institution’s standard operating procedures for patients experiencing STEMI. Emergency care providers need to be cognizant that the scientific literature is constantly evolving and that they must maintain an awareness of the ongoing evidence that forms the foundation of these guidelines. These guidelines will require future revision as the ACC / AHA guidelines are updated.

For further information about this White Paper or the Central Ohio Trauma System, visit www.goodhealthcolumbus.org/cots or contact nbechtel@goodhealthcolumbus.org.

REFERENCES

- 2009 Focused Updates: ACC/AHA Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction (Updating the 2004 Guideline and 2007 Focused Update) and ACC/AHA/SCAI Guidelines on Percutaneous Coronary Intervention (Updating the 2005 Guideline and 2007 Focused Update). A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines.** Frederick G. Kushner, Mary Hand, Sidney C. Smith, Jr, Spencer B. King, III, Jeffrey L. Anderson, Elliott M. Antman, Steven R. Bailey, Eric R. Bates, James C. Blankenship, Donald E. Casey, Jr, Lee A. Green, Judith S. Hochman, Alice K. Jacobs, Harlan M. Krumholz, Douglass A. Morrison, Joseph P. Ornato, David L. Pearle, Eric D. Peterson, Michael A. Sloan, Patrick L. Whitlow and David O. Williams. *Circulation* online Nov 18, 2009; DOI: 10.1161/CIRCULATIONAHA.109.
- 2007 Focused Update of the ACC/AHA 2004 Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines: Developed in Collaboration With the Canadian Cardiovascular Society Endorsed by the American Academy of Family Physicians: 2007 Writing Group to Review New Evidence and Update the ACC/AHA 2004 Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction, Writing on Behalf of the 2004 Writing Committee.** Elliott M. Antman, Mary Hand, Paul W. Armstrong, Eric R. Bates, Lee A. Green, Lakshmi K. Halasyamani, Judith S. Hochman, Harlan M. Krumholz, Gervasio A. Lamas, Charles J. Mullany, David L. Pearle, Michael A. Sloan, Sidney C. Smith, Jr, 2004 Writing Committee Members, Elliott M. Antman, Daniel T. Anbe, Paul W. Armstrong, Eric R. Bates, Lee A. Green, Mary Hand, Judith S. Hochman, Harlan M. Krumholz, Frederick G. Kushner, Gervasio A. Lamas, Charles J. Mullany, Joseph P. Ornato, David L. Pearle, Michael A. Sloan, Sidney C. Smith, Jr, Sidney C. Smith, Jr, Alice K. Jacobs, Cynthia D. Adams, Jeffrey L. Anderson, Christopher E. Buller, Mark A. Creager, Steven M. Ettinger, Jonathan L. Halperin, Sharon A. Hunt, Harlan M. Krumholz, Frederick G. Kushner, Bruce W. Lytle, Rick Nishimura, Richard L. Page, Barbara Riegel, Lynn G. Tarkington and Clyde W. Yancy. *Circulation* 2008;117;296-329; originally published online Dec 10, 2007. DOI: 10.1161/CIRCULATIONAHA.107.188209.
- 2004 ACC/AHA Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction), Developed in Collaboration With the Canadian Cardiovascular Society.** Elliott M. Antman, MD, FACC, FAHA, *Chair*, Daniel T. Anbe, MD, FACC, FAHA, Paul Wayne Armstrong, MD, FACC, FAHA, Eric R. Bates, MD, FACC, FAHA, Lee A. Green, MD, MPH, Mary Hand, MSPH, RN, FAHA, Judith S. Hochman, MD, FACC, FAHA, Harlan M. Krumholz, MD, FACC, FAHA, Frederick G. Kushner, MD, FACC, FAHA, Gervasio A. Lamas, MD, FACC, Charles J. Mullany, MB, MS, ACC, Joseph P. Ornato, MD, FACC, FAHA, David L. Pearle, MD, FACC, FAHA, Michael A. Sloan, MD, FACC, Sidney C. Smith, Jr., MD, FACC, FAHA. c 2004.

Franklin County Hospitals with Primary PCI Capabilities

APPENDIX A

	Doctors Hospital	Grant Medical Center	Mount Carmel East	Mount Carmel St. Anns	Mount Carmel West	The OSU Medical Center	Riverside Methodist Hospital
My hospital has open-heart surgery in house.	Yes						
Hospital has a multidisciplinary team (including primary care physicians, emergency medicine physicians, cardiologists, nurses, and ancillary staff) operating under a guideline-based, institution-specific written protocol for triaging and managing patients who are seen in the prehospital setting or present to the ED with symptoms suggestive of STEMI.	Yes						
Hospital has and is willing to share written STEMI protocol.	Yes						
Hospital is committed to taking STEMI patients to the cath lab 100% of the time for PCI as opposed to using fibrinolytics except for extenuating medical contraindications/circumstances.	Yes						
Number of angioplasties (STEMI and otherwise) performed annually:	101-500	501-1,000	>1,000	51-100 (since 11/09)	>1,000	>1,000	>1,000
Hospital's hours of operation that cath lab staff is available in hospital are (denoted in military time):	0700-1730	Mon-Fri, 0700-1730	0700-1930	Mon-Fri, 0700-1730	0700-1930	0700 to 1900	Sun. 2300- Fri. 1930
Hospital's hours of operation that cath lab staff is on call and NOT in the hospital are (denoted in military time):	1730-0700	1730-0700 & 24 hrs. on weekends & holidays	1930-0700	1730-0700 & 24 hrs. on weekends & holidays	1930-0700	1900 to 0700	Fri. 1930- Sun. 2300
Following CORE measurements for STEMI definitions, hospital is committed, 100% of the time, to meeting the ACC/AHA goal of ED door to balloon time within 90 minutes.	Yes						
Hospital's cardiologists allow the emergency dept to activate the cath lab for STEMI patients prior to Cardiology assessing the patient.	Yes						
Hospital willing to conduct STEMI education for local EMS .	Yes						
Hospital contact for protocols and additional information:	Nancy Colburn, RN (614) 544-2196 ncolburn@ohiohealth.com	Mark Huckaby, NREMT (614) 566-9911 mhuckaby@OhioHealth.com	Shar Brown, RN (614) 546-3429 sbrown2@mchs.com	Shar Brown, RN (614) 546-3429 sbrown2@mchs.com	Shar Brown, RN (614) 546-3429 sbrown2@mchs.com	Sharon Hammond, RN (614) 579-1455 sharon.hammond@osumc.edu	Danny Marcum, RN, EMTP (614) 566-5517 dmarcum3@ohiohealth.com

Franklin County Hospitals without Primary PCI Capabilities

APPENDIX B

APPENDIX B	Dublin Methodist Hospital	OSU East
Our hospital protocol for transfer to PCI facility is:	The STEMI patient is stabilized and transferred to Riverside Methodist Hospital; a STEMI alert is initiated at RMH for the patient.	When a STEMI patient is identified, interventional cardiology at the Ross is paged and MedFlight or Rural Metro is contacted at the same time for transfer. ED Staff assists Rural Metro in transporting patient to prevent delay.
Hospital has and is willing to share their written PCI transfer protocol.	Yes	
Hospital committed 100% of the time to affecting the transfer of STEMI patients to a PCI-capable hospital so that PCI is initiated within 90 minutes.	Yes	
Hospital's future plans regarding PCI capability:	No plans at this time	
Hospital has a multidisciplinary team (including primary care physicians, emergency medicine physicians, cardiologists, nurses, and ancillary staff) operating under a guideline-based, institution-specific written protocol for triaging and managing patients who are seen in the prehospital setting or present to the ED with symptoms suggestive of STEMI.	Yes	
Hospital has and is willing to share our written STEMI protocol.	Yes	
Hospital has the capability to administer thrombolytics within 30 minutes of the patient's arrival.	Yes	
Hospital contact for protocols and additional information:	Dave Boehmer, MD Emergency Department Medical Director (614) 544-8310	Sharon Hammond, RN (614) 579-1455 sharon.hammond@osumc.edu

Central Ohio County Hospitals with Primary PCI Capabilities

APPENDIX C

	Fairfield Medical Center	Knox Community Hospital	Licking Memorial Health Systems	Marion General Hospital
My hospital has open-heart surgery in house.	Yes	No	No	Yes
Hospital has a multidisciplinary team (including primary care physicians, emergency medicine physicians, cardiologists, nurses, and ancillary staff) operating under a guideline-based, institution-specific written protocol for triaging and managing patients who are seen in the prehospital setting or present to the ED with symptoms suggestive of STEMI.	Yes	Yes	Yes	Yes
Hospital has and is willing to share written STEMI protocol.	Yes	Yes	Yes	Yes
Hospital is committed to taking STEMI patients to the cath lab 100% of the time for PCI as opposed to using fibrinolytics except for extenuating medical contraindications / circumstances.	Yes	Yes	Yes	Yes
Number of angioplasties (STEMI and otherwise) performed annually:	101-500	101-500	101-500	101-500
Hospital's hours of operation that cath lab staff is available in hospital are (denoted in military time):	Mon-Fri 0630-1800	Mon-Fri 0700-1630	Mon-Fri 0700-1700	Mon-Fri 0600-1700
Hospital's hours of operation that cath lab staff is on call and NOT in the hospital are (denoted in military time):	Mon-Fri 1800-0630 & on weekends	Mon-Fri 0700-1630 & on weekends	Mon-Fri 0700-0700 & on weekends	Mon-Fri 0600-0700 & on weekends
Following CORE measurements for STEMI definitions, hospital is committed, 100% of the time, to meeting the ACC/AHA goal of ED door to balloon time within 90 minutes.	Yes	Yes	Yes	Yes
Hospital's cardiologists allow the emergency dept to activate the cath lab for STEMI patients prior to Cardiology assessing the patient.	Yes	No	Yes	Yes
Hospital is willing to conduct STEMI education for local EMS.	Yes	Yes	Yes	Yes
Hospital contact for protocols and additional information:	No contact name given	Steve Hack, RT, RCIS Director Cath Lab (740) 393-9937	Patty Merrick, RN Cardiology (740) 348-4186	Kimlyn Queen, RN Director Cardiac Cath (740) 383-8602

Central Ohio County Hospitals without Primary PCI Capabilities

APPENDIX C

	Diley Ridge Medical Center	Grady Memorial Hospital	Madison County Hospital	Memorial Hospital of Union County
Our hospital protocol for transfer to PCI facility is:	To get accepting cardiology and transfer straight to cath lab if possible	Stabilization & transfer within 60 minutes for PCI within 90 minutes	Stabilize and transfer within 30-45 minutes	Follow EMTALA guidelines & refer to OSU STEMI Program unless otherwise requested by the patient or family
Hospital has and is willing to share their written PCI transfer protocol.	Yes	Yes	No (no written protocol)	No
Hospital is committed 100% of the time to affecting the transfer of STEMI patients to a PCI-capable hospital so that PCI is initiated within 90 minutes.	Yes	Yes	Yes	Yes
Hospital's future plans regarding adding PCI capability:	No plans at this time	No plans at this time	No plans at this time	No plans at this time
Hospital has a multidisciplinary team (including primary care physicians, emergency medicine physicians, cardiologists, nurses, and ancillary staff) operating under a guideline-based, institution-specific written protocol for triaging and managing patients who are seen in the prehospital setting or present to the ED with symptoms suggestive of STEMI.	Yes, but do not have cardiology on staff	Yes	No	Yes
Hospital has and is willing to share our written STEMI protocol.	Yes	Yes	No (no written protocol)	No
Hospital has the capability to administer thrombolytics within 30 minutes of the patient's arrival.	Yes	Yes	Yes	Yes
Hospital contact for protocols and additional information:	Monica Trenish, RN (614) 838-7930 mtreinish@dileyridge.com	Kim Thompson, RN (740) 615-1150 kthomps4@OhioHealth.com	Not provided	Not provided