MARCER and Missouri Kansas City EMS Region Time Critical Diagnosis Plan

A Regional Plan for
Pre-Hospital and Inter-Hospital Care
of Time Critical Diagnosis Patients

Approved plan

Effective January 17, 2025

Created by the Mid-America Regional Council Emergency Rescue (MARCER) Committee

MARC
Mid-America Regional Council

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FOREWORD

For patients who experience trauma, stroke or STEMI, a potentially fatal form of heart attack, time is critical. All of these conditions require quick assessment, diagnosis and treatment by a facility that can provide timely, definitive care to minimize risk for preventable complications and death.

The vision of this plan is to establish a uniform set of criteria for the pre-hospital and inter-hospital triage and transport of these Time Critical Diagnosis (TCD) patients. Local TCD plans may deviate from this plan in order to acknowledge and address variations in each community's resources and medical direction.

The primary focus of the TCD plan is to provide principles that facilitate the early recognition of patients suffering from STEMI, acute stroke or traumatic injuries, and expedite their transport to a facility that is able to provide definitive care within an appropriate time window.

The TCD plan was developed by the Mid-America Regional Council Emergency Rescue (MARCER) committee and formally adopted in January 2011. Additional emergency medical service providers in the broader Kansas City EMS region adopted the plan in August 2011. For the Kansas providers this plan is considered a model plan and the adoption does not establish it as a plan for the communities but instead as a guideline which can be varied as the need arises. In Kansas this plan does not establish the standard of care.

Success of this system is dependent on the participation of EMS providers and hospitals in both the MARCER and Kansas City EMS regions. This will require continuous review and communication between the partners in this effort.

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Appendices

Approval and Changes

Date	Description
January 2011	Plan approved by MARCER
August 8, 2011	Plan with amendments approved by Kansas City EMS Region Committee
January 31, 2012	Matrix updated, Research, Centerpoint,
February 7, 2012	Matrix updated, Overland Park Regional
May 1, 2012	Matrix update, Belton Regional Medical Center
November 9, 2012	Matrix update, Lee's Summit Medical Center, Saint Luke's East. Revisions from November 6th, 2012, TCD Meeting
January 22, 2013	Revision to Aspirin delivery guideline, revision to SBAT, Stroke interfacility transfer form and protocol.
February 8, 2013	Revision of the trauma routing criteria based on direction regional trauma directors.
April 11th, 2014	TCD Review and revision
September 3, 2014	Update to Appendix D: QI Contact List – list review
September 19, 2014	Added burn care receiving definition and burn routing criteria.
October 17, 2014	Revision based on comments and to add clarity in reflecting 2011 Field Triage guidelines.
November 25, 2014	Revise ASA guideline, add Witness to SBAT, Add CMH transport to EMS agencies, all based on SAC MD Review.
February 9, 2015	Additional language added as recommended by DHSS review prior to final approval.
March 1, 2015	Modification of the language as recommended by DHSS review prior to final approval.
March 6, 2015	MARCER TCD Plan was approved by DHSS. Addendum added in document based on recommendations for clarification of our plan.
March 23, 2015	Missouri Stroke designations were added to Appendix A
April 26, 2017	QI Contact List updated in Appendix D
March 15, 2024	Plan received complete review and revisions made to plan. The Plan was approved on March 15, 2024 by MARCER and TCD Coordinators. To be sent to Medical Directors and State of MO for approval.

January 17, 2025	Adopted plan

Background

The Mid-America Regional Council Emergency Rescue committee, commonly known as MARCER, promotes regional coordination and cooperation in emergency pre-hospital care for the metropolitan Kansas City region.

MARCER serves the nine-county, bistate Greater Kansas City region, which includes Cass, Clay, Jackson, Platte and Ray counties in Missouri, and Johnson, Leavenworth, Wyandotte and Miami counties in Kansas. The MARCER region spans 4,400 square miles, including 120 cities, 43 EMS agencies and 33 hospitals.

The Kansas City EMS Region is a body created under state law 190.102 with an appointed governing committee consisting of EMS professionals, fire service representatives, emergency physicians, trauma surgeons, specialty nurses and others as defined in Missouri Department of Health & Senior Services regulation (19 CSR 30-40.302). The Kansas City EMS Region consists of the Missouri counties of Bates, Carroll, Cass, Clay, Henry, Jackson, Johnson, Lafayette, Platte, and Ray. The Kansas City EMS Region does not include any Kansas counties. The regional boundaries are not established in law, but through regulation, and the use of the regional boundaries is not required for the creation of a TCD regional/ community plan.

TCD plans are identified in Missouri Statues 190.200-243, which created the statewide TCD program.

MARCER initiated the process which led to the development of this TCD plan. The Kansas City EMS Region has adopted the MARCER plan with a few changes to adapt the plan for the more rural areas of the larger Kansas City EMS Region.

The Kansas City EMS Region appreciates MARCER's willingness to allow the broader adoption of its TCD plan and the use of MARCER's resources in the creation of a joint data collection process.

MARCER AND MISSOURI KANSAS CITY EMS REGION — EMS AGENCIES	
American Medical Response*	Lee's Summit Fire Department*
American Paramedical Services, Inc.	Lenexa Fire Department*
Bates County Memorial Hospital Ambulance	Lexington Fire Department*
Belton Emergency Services*	Liberty Fire Department*
Bonner Springs Ambulance District*	LifeFlight Eagle*
Carroll County Ambulance District	Lone Jack Fire Protection District*
Central Cass County Fire Protection District*	Lotawana Fire Protection District*
Central Jackson County Fire Protection District*	Miami County EMS*
Childrens Mercy Critical Care Transport*	North Kansas City Fire Department*
Claycomo Fire Department*	Northland Regional Ambulance District*
Cole Camp Community Ambulance District	Odessa EMS
Concordia Fire Protection District	Olathe Fire Department*
Excelsior Springs Fire Department*	Overland Park Fire Department*
Fort Osage Fire District *	Pleasant Hill Ambulance District*
Franklin County Ambulance *	Pleasant Valley Fire Department*
Garden City Fire Protection District*	Prairie Township Fire Protection District*
Gladstone Public Safety Department*	Ray County EMS*
Golden Valley Memorial Hospital Ambulance	Raytown EMS*
Grandview Fire Department*	Raytown Fire Protection District*
Harrisonville Fire Department*	Saline Ambulance District #3
Higginsville EMS*	Slater Ambulance District
Holt Fire Protection District*	Smithville Fire Protection District*
Independence Fire Department*	Sni Valley Fire Protection District*
John Knox Village EMS*	South Metro Fire District. *
Johnson County, Kan., Fire District #2 (Rural)*	Southern Platte Fire District*
Johnson County Med-Act*	Staff for Life Helicopter – LaMonte
Johnson County, Mo., Ambulance District	Sweet Springs Ambulance District
Kansas City, Kan., Fire Department*	Warsaw-Lincoln Ambulance District
Kansas City, Mo., Fire Department. *	Wellington-Napoleon Fire Protection District*
Kearney Fire and Rescue*	West Peculiar Fire Protection District*
Lake City Fire Department*	West Platte Fire Protection District*
Lawrence-Douglas County Fire and Medical*	Windsor Ambulance District
Lawson Fire and Rescue*	
Leavenworth EMS*	

** MARCER members*

MARCER AND MISSOURI KANSAS CITY EMS REGION — HOSPITALS	
AdventHealth Lenexa AdventHealth South Overland Park AdventHealth Shawnee Mission AdventHealth College BLVD Belton Regional Medical Center* Carroll County Memorial Hospital Cass Regional Medical Center* Centerpoint Medical Center* Children's Mercy Kansas City* Dwight Eisenhower Veterans Hospital* Excelsior Springs Hospital* Golden Valley Memorial Hospital Lafayette Regional Health Center Lawrence Memorial Hospital* Lee's Summit Hospital* Liberty Hospital* Menorah Medical Center* Miami County Medical Center * North Kansas City Hospital* Olathe Medical Center*	Overland Park Regional Medical Center* Providence Medical Center* Ray County Memorial Hospital Research Medical Center* Research Medical Center-Brookside* St. John's Hospital* St Joseph Medical Center* St. Luke's Cushing Hospital* St Luke's Hospital Northland* St Luke's Hospital Plaza* St Luke's Hospital South* St. Luke's Hospital East* St. Mary's Hospital* University Health-TMC* University Health-LMC* University of Kansas Hospital* Western Missouri Medical Center Veterans Administration Hospital*

** MARCER members*

Time Critical Diagnosis Plan

In 2010, MARCER appointed a Time Critical Diagnosis Sub Committee to develop a coordinated, region-wide system of care for patients experiencing injuries or illnesses that fall within diagnosis categories that are time critical.

The purpose of this plan is to provide a common framework and language for the initial care and transport of TCD patients, with the goal of optimizing the care provided to our community. It should be noted that although this plan focuses on stroke, STEMI and Trauma patients, the plan may be expanded to include other TCD's such as Sepsis and cardiac arrest.

The vision of this TCD Plan is to establish a uniform set of criteria for the pre-hospital and inter-hospital triage and transport of STEMI, acute stroke, and trauma patients. Local TCD plans in Missouri may augment this plan to acknowledge and address variations in each community's EMS and hospital resources. This plan is considered a model plan for Kansas communities and these communities may deviate from this plan where local resources vary, or medical direction determines that a different criterion is appropriate. The primary focus of the plan is to provide principles to facilitate early recognition of patients suffering from STEMI, acute stroke, and traumatic injuries and to expedite their transport to a center able to provide definitive care within an appropriate time window.

Active participation on the part of all EMS agencies (transport and first-response), hospitals, STEMI centers, stroke centers and trauma centers, and all personnel therein will eventually define the success or failure of this program.

Several key activities must be undertaken so the system becomes functional:

- Develop triage and transport guidelines.
- Develop suggested basic management guidelines for various levels of care.
- Use and maintain the EMSystem. The EMSystem is an internet-based program designed to maintain up-to-the-minute information about a hospital's status (open or closed to ambulances) as it relates to STEMI, stroke, trauma or medical cases. The EMSystem is monitored in EMS communications centers around the region and is used to determine which facilities are open or closed. The program has many features, including the ability to discriminate between different reasons for being open or closed and whether the facility is able to handle a STEMI, stroke or trauma patient.
- Collect and report performance data including the creation and maintenance of contact lists for various centers and agencies.

Kansas City Region EMS agencies and Kansas agencies recognize the continuing evolution of scientific evidence indicating successful management of STEMI, stroke and trauma patients. In some instances, real-time contact with regional or local medical direction should be used to discuss individual cases and determine alternate transport and treatment decisions based on the dynamics of an individual case.

Hospitals in Missouri will be designated as Level I–IV STEMI and/or Stroke Centers. MARCER EMS agencies will utilize those STEMI/Stroke Centers as designated.

Definitions

ACS: Acute coronary syndrome – symptoms consistent with an acute coronary event including but not limited to chest pain, upper abdominal pain, upper back pain, upper extremity pain, dyspnea, diaphoresis, weakness and nausea.

Burn Care Receiving Facility: Burn receiving centers in both Kansas and Missouri are hospitals that have a burn program in place with the ability to evaluate and care for large burns (>20% TBSA) including the following capabilities:

1) There must be at least 1 full-time equivalent attending staff surgeon involved in the management of burn patients for each 300 annual acute admissions.
2) The burn service must maintain on-call schedule for attending staff surgeons who are assigned to the burn service who must be available within 30 minutes of notification on a 24-hour basis.
3) The burn center hospital must maintain a specialized nursing unit dedicated to acute burn care.
4) The burn center must have at least 4 burn beds that are ICU capable within the dedicated burn unit.

PCI: Percutaneous coronary intervention.

Provider with first medical contact: May be an EMS or Emergency Department (ED) care provider, depending on how the patient enters the health care system.

STEMI: ST-elevated myocardial infarction or new onset of left bundle branch block (LBBB).

STEMI Receiving Centers: In both Kansas and Missouri, hospitals that have a STEMI Program in place with the ability to evaluate and care for acute coronary syndromes, including:

1. A medication formulary which includes IV thrombolytic, with evidence-based processes/procedures in place to administer, when clinically indicated, 24/7.
2. The capacity to perform PCI 24/7.
3. Plans or processes in place to ensure that from the time the STEMI team is activated that the cardiovascular lab will be open and operational within 30 minutes, and the total Door-to-Balloon time does not exceed 90 minutes.
4. Practitioner(s) experienced in the diagnosis and treatment of STEMI who will be available within 15 minutes and at the bedside of a STEMI patient.
5. The ability to provide Cardiac ICU.

6. Plans or processes in place to transfer patients in an expedited manner to a facility with cardiothoracic surgery capabilities if such services are not immediately available at the first facility.

STEMI Receiving Centers will be based on Accreditation or State Designation. In Missouri the Missouri Department of Health and Senior Services will designate those hospitals who meet the requirements as Level I or Level II STEMI Centers.

STEMI Referral Center: In both Kansas and Missouri, STEMI Referral Centers based on Accreditation or State Designation are those hospitals that do not have the capacity to perform PCI 24/7 but do have the ability to evaluate and care for acute coronary syndromes, including the ability to administer a thrombolytic agent and transfer or transfer without administration of a thrombolytic to a STEMI receiving center within 30 minutes of patient arrival.

In Missouri, STEMI Referral Centers will be those hospitals designated as Level III or Level IV STEMI Centers by the Missouri Department of Health and Senior Services

Primary Stroke Center: In both Kansas and Missouri, those hospitals that have:

1. 24/7 coverage to perform and report in 45 minutes or less: brain imaging (CT or MRI); labs (CBC w/ platelets, PT/INR, blood chemistries); EKG; CXR.
2. A medication formulary which includes IV thrombolytics; with evidence-based processes/procedures in place to administer, when clinically indicated, 24/7.
3. Practitioner(s) experienced in the diagnosis and treatment of stroke who will be available within 15 minutes and at the bedside of an acute stroke patient.
4. Neurosurgical coverage or a protocol to transfer acute stroke patients and, if neurosurgical coverage is available, the ability to have an Operating Room ready in two hours or less.

Primary Stroke Centers will be based on Accreditation or State Designation. In Missouri, the Missouri Department of Health and Senior Services will designate those hospitals who meet the requirements a Level II Stroke Center.

Comprehensive Stroke Centers: In both Missouri and Kansas, Comprehensive Stroke Centers will be hospitals based on accreditation or State Designation that have primary stroke center designation, plus neuro-interventionalists and the support staff and equipment to provide 24/7 intra-arterial treatment for acute stroke.

Comprehensive Stroke Centers will be based on Accreditation or State Designation. In Missouri, the Missouri Department of Health and Senior Services will designate those hospitals who meet the requirements a Level I Stroke Center.

Stroke Referral Centers: In both Missouri and Kansas, Stroke Referral Centers will be those hospitals that may not meet all the requirements of a Stroke Receiving Center or Comprehensive Stroke Center but can deliver acute thrombolytic stroke treatment 24/7 and have in place processes/procedures in that encompass the following:

1. An identified Stroke Receiving Center or Comprehensive Stroke Center (as defined in this document) that will accept their stroke patients.
2. 24/7 access to a timely, informed consultation about the use of IV thrombolytic therapy, obtained from a physician with additional expertise in the diagnosis and treatment of ischemic stroke (either at the bedside, by telephone or through telemedicine).
3. 24/7 coverage to perform and report in 45 minutes: brain imaging (CT or MRI); labs (CBC w/ platelets, PT/INR, blood chemistries); EKG.
4. A medication formulary which includes IV thrombolytics; with evidence-based processes/procedures in place to administer, when clinically indicated, 24/7.
5. Practitioner(s) experienced in the diagnosis and treatment of stroke who will be available within 15 minutes and at the bedside of an acute stroke patient.
6. The ability to transfer a patient with acute stroke symptoms to the identified Primary or Comprehensive Stroke Center within 60 minutes.

Stroke Referral Centers will be based on Accreditation or State Designation. In Missouri, based on State Designation, the Missouri Department of Health and Senior Services will designate those hospitals who meet the requirements a Stroke Referral Centers as Level III Stroke Centers.

TCD (Time Critical Diagnosis): A medical condition where the time to definitive care may play an important role in modifying the outcome.

Trauma Center: A hospital distinguished by the availability of surgeons, physician specialists, anesthesiology services, nurses, and resuscitation and life support equipment on a 24/7 basis to care for persons with trauma. This term shall include the following: Level I trauma centers; Level II trauma centers; and Level III trauma centers.

In Kansas, Trauma Centers will be those Level I, II, or III hospitals that have been verified by the American College of Surgeon's Kansas Department of Health and Environment designates Level IV Trauma Centers.

In Missouri, Trauma Centers will be those hospitals designated or verified by the Missouri Department of Health and Senior Services or American College of Surgeons as Level I, II, or III Trauma Centers.

24/7: Twenty-four (24) hours per day, seven (7) days per week.

Recommendation

I. Community Education

MARCER and the Kansas City EMS Region should develop community plans in coordination with public health, hospitals, EMS agencies and other partners to improve early recognition of TCD signs and symptoms and the increased awareness of appropriate response.

II. Emergency Medical Dispatch (EMD) and Pre-Arrival Instructions

EMS communication centers should utilize a system of EMD whenever possible to match the level of response to the patient need. This should include specific approved pre-arrival instructions whenever possible to begin pre-arrival treatment as approved by the Communication Center Medical Director.

EMS communication centers should consider early launch of medical helicopters in accordance with Appendix F and Appendix G, to seek patient transportation to the appropriate receiving center.

III. Rapid Transport

Because time is of the essence in TCD patients, EMS providers should initiate rapid transport once a TCD patient is identified. Consideration should also be given to pre-hospital resources, including use of air medical transport, that are available at the time of the incident and other conditions such as transport time, road, and weather conditions.

The use of the term "rapid transport of a Time Critical Diagnosis Patient" shall be done in accordance within the jurisdiction's standard operating guidelines or protocol.

Use of air medical transport can facilitate TCD patients reaching designated centers in a timeframe that allows for acute treatment interventions. The use of Air Medical Utilization Guidelines (Appendix F) and the Helicopter Early Launch Process Guidelines (Appendix G) will help caregivers determine the best mode of transport.

IV. Protocols

EMS agencies should develop and adopt TCD Protocols based upon the following example identification and notification guidelines.

STEMI GUIDELINES:

OBJECTIVE: To provide guidelines to facilitate the early recognition of patients suffering from a STEMI and to expedite their transport to a center capable of providing definitive care within an appropriate time window. All patients presenting to the health care system with a STEMI diagnosis will receive a thrombolytic within 30 minutes of arrival to Hospital or PCI within 90 minutes of first medical contact.

IDENTIFICATION OF STEMI:

1. A 12-lead ECG will be acquired and interpreted within 10 minutes of patient contact.
    a. In the case of an all-BLS service, the 12-lead ECG machine interpretation of STEMI (Acute MI) should be communicated to a receiving hospital within 10 minutes of patient contact.
    b. Consider completing ECG with additional right side and posterior leads if that capability is present and clinically indicated.

COMMUNICATION OF ST ELEVATION

1. Patients presenting through the EMS System:
    a. EMS will notify the receiving facility that a patient with a STEMI has been identified as early as possible preferably “at bedside”. Notification of a “STEMI Alert” is appropriate.
        i. STEMI Receiving Centers will respect verbal notification, transmitted/ faxed ECGs or ECG computer interpretation of Acute MI with ST Elevation from an EMS service.
    b. STEMI Receiving Centers will activate their STEMI team upon notification by the EMS service.
2. Patients presenting through the STEMI Receiving Center Emergency Department (ED):
    a. All patients presenting with ACS symptoms will have a 12-lead ECG acquired and interpreted within 10 minutes of initial assessment.
        i. Consider completing ECG with additional right side and posterior leads if that capability is present and clinically indicated.
    b. Activate the STEMI team immediately upon identification of STEMI.
3. Patients presenting through the STEMI Referral Center ED:
    a. All patients presenting with ACS symptoms will have a 12-lead ECG acquired and interpreted within 10 minutes of initial assessment.
        i. Consider completing ECG with additional right side and posterior leads if that capability is present and clinically indicated.
    b. Contact an EMS transport service as soon as possible, even if receiving location not yet known.
        i. Communicate that the patient is a “Time Critical Diagnosis Patient.”
    c. Contact a STEMI Receiving Center as soon as possible.
    d. The STEMI Receiving Center will activate its STEMI Team upon notification by the STEMI Referral Center.

EMS TRANSPORT GUIDELINES

1. EMS will transport patients with identified STEMI directly to the appropriate STEMI Receiving Center that requires the shortest transport time. (Geography, driving conditions, etc., should be considered.)
2. The EMS service will give due consideration to the goal of 90 minutes or less from first medical contact to PCI/balloon. When there is not a STEMI Receiving Center proximate enough to achieve a first medical contact to PCI/balloon time of 90 minutes or less, then:
    a. Patient may be transported to the closest STEMI Referral Center, or
    b. Ground EMS may contact air ambulance to rendezvous as appropriate.

3. When the EMS unit is BLS or unable to identify a STEMI patient, the patient can be transported to the closest appropriate hospital.
4. When a patient requests transport to a specific hospital, EMS will respect the patient's request unless the longer transport time is contraindicated by the patient's condition.
    a. Patient/family preference is the highest level of authority and patients/families have the right to choose their destination even if it is not in their best interest. If patients/families request to go to a destination hospital that is not prepared to offer the care required, they must be given information to help them make an informed decision, including the associated risks of deciding on an inappropriate destination.

EMS STEMI MANAGEMENT GUIDELINES

EMS organizations are required to work under established patient care guidelines or protocol which are approved by that agencies Medical Director. These guidelines or protocols should be continually reviewed and updated to maintain current standards of care. Local EMS Medical Directors are encouraged to collaborate cardiologists at receiving facilities and formulate management protocols with those physicians/facilities.

INTERFACILITY TRANSFER GUIDELINES

(Note: These management guidelines are suggested treatments only. Referring facilities are encouraged to consult cardiologists at receiving facilities and formulate management protocols with those physicians/facilities)

1. All centers (both referral and receiving) are encouraged to have transfer agreements in place whenever possible.
2. STEMI Referral Centers will respect requests for transport to a specific hospital made by the patient, and/or consider preexisting patient-hospital system relationships.
    a. Patient/family preference is the highest level of authority and patients/families have the right to choose their destination even if it is not in their best interest. If patients/families request to go a destination hospital that is not prepared to offer the care required, they must be given information to help them make an informed decision, including the associated risks of deciding on an inappropriate destination.
3. STEMI Referral Centers should administer a thrombolytic or transfer the patient in 30 minutes or less of arrival.
4. STEMI Referral Centers should communicate:
    a. Time of onset of anginal equivalent symptoms.
    b. Location of ST elevation.
    c. Patient condition.
    d. Medication patient received prior to transfer.

5. To not delay a transfer, Referral Centers may send only EMTALA paperwork with the patient. Additional records and/or copies of x-rays may be faxed or sent by courier later.
6. Thrombolytic agents should be considered if transportation is delayed for any reason that would prolong time to intervention of longer than 120 minutes from first medical contact to intervention.

REFERRAL CENTER STEMI MANAGEMENT GUIDELINES

STEMI Referral Centers are expected to have in place management protocols to include initial assessment, identification, management, and transfer of STEMI patients. Centers are encouraged to consult cardiologists at receiving centers and formulate management protocols with those physicians/facilities.

EXPECTATIONS OF THE STEMI RECEIVING CENTER

1. All centers (both referral and receiving) are encouraged to have a prearranged transfer process in place whenever possible.
2. STEMI Receiving Centers will minimize diversion for STEMI patients. The goal is to only divert a STEMI patient if the CV Lab equipment is out of service or other patients already being treated would prevent the patient from receiving intervention in less than 90 minutes of first medical contact.
3. STEMI Receiving Centers will communicate the following to the EMS and Referral Centers as soon as possible:
    a. Verify STEMI diagnosis.
    b. Time to intervention.
    c. Patient condition.

STROKE GUIDELINES:

OBJECTIVE: To provide guidelines to facilitate the early recognition of patients suffering from acute stroke and to expedite their transport to a center capable of providing definitive care within an appropriate time window.

IDENTIFICATION OF STROKE

1. Patient presentation may include:
    a. Neurologic deficit defined as sudden onset of:
        i. Localized weakness, hemiparesis, or hemiplegia of face, arm, or leg
        ii. Gait disturbances, dizziness or vertigo
        iii. Speech changes such as slurred speech, difficulty talking, or understanding

iv. Altered mentation

v. Vision changes: dysconjugate gaze, forced eye deviation, double/blurred vision

vi. Severe headache, neck pain/stiffness

b. Perform LVO Stroke Scale of agency choice (FAST-ED located Appendix B for reference)

i. If last known well <24 hours or unknown, transport to receiving facility based on LVO score POSITIVE or NEGATIVE:

1. If LVO screen is POSITIVE (for example, if using FAST-ED, score is ≥4) transport should be to a Comprehensive Stroke Center

2. If LVO screen is NEGATIVE (for example, if using FAST-ED, score is ≤3) transport to closest stroke center

c. Any sudden onset of neurological deficit as outlined above should be pre-alerted to appropriate intervention facility as a CODE STROKE. LVO screening tool is used to assist in determining need for direct transport to a facility capable of performing mechanical thrombectomy.

2. All patients with a presumptive stroke diagnosis shall have a quick assessment of airway, breathing, circulation and neurological assessment.

a. Ensure that the patient's airway is open and that breathing, and circulation are adequate.

b. Consider other causes of altered mental status, such as hypoxia, hypoperfusion, hypoglycemia, trauma, or overdose.

c. Perform blood glucose assessment to rule out hypoglycemia.

d. Establish whenever possible:

i. 'Onset time of signs/symptoms' or 'Last Known Well (LWK)'

ii. Contact person for authorization to consent to treat whenever possible

iii. History – "last known well" and source of that information

iv. Neurologic status assessment

v. History anticoagulant use (e.g., Warfarin, Eliquis, Xarelto, Pradaxa, etc.)

vi. Note when time of last dose

vii. History of recent trauma

viii. History of recent seizure

ix. History of recent surgery in the past 3 months

x. History of recent hemorrhage (e.g., GI bleed)

xi. Bleeding disorder

PEDIATRIC STROKE

1. Children may present with localizing symptoms such as hemiparesis, facial droop, speech disturbance and/or ataxia. Children are more likely than adults to present with non-localizing symptoms such as headache, irritability, or altered mental status. Seizures, especially <6years of age, are more likely to present at stroke onset[1].
2. Risk factors for acute ischemic stroke in children include but not limited to acute viral illness, especially upper respiratory tract infection, recent fever, dehydration, and/or recent head/neck infection. Children with sickle cell disease, congenital or acquired heart disease, hyper coagulopathies, autoimmune disorders, and history of previous stroke are at higher risk.
3. Acute management of a pediatric patient with concern for acute ischemic stroke can be found in Appendix B of this document.
4. Per AHA/ASA scientific statement on pediatric stroke, a pediatric patient with potential acute ischemic stroke should be transported to a tertiary pediatric stroke center with the following[1]:
    a. Pre-established pediatric specific stroke protocols
    b. Pre-established criteria for administration of systemic alteplase
    c. Pre-established criteria for consideration of endovascular thrombectomy
    d. Specifically trained experts and technology in vascular neurology, neuroimaging, and neurocritical care
    e. 24/7 access to care from pediatric neurologists, hematologist, vascular neurosurgeon, neuroradiologist, anesthesiologist, neuro-interventionalist, and neuro critical care intensivists.
    f. Established relationship with vascular neuro-interventionist with both adult and pediatric experience
5. Transport and/or transfer to the nearest pediatric stroke capable facility.
6. Children's Mercy Adele Hall Main Campus[3]
    a. Tertiary pediatric stroke center
    b. 1-800-GOMERCY, request to speak to neurologist on-call for potential acute stroke

c. For Pediatric Stroke referral follow up or additional questions: pedstroke@cmh.edu

EMS TRANSPORT GUIDELINES

1. EMS agencies with extended ground transport time should consider using helicopter transportation if available.
2. For patients meeting exclusion criteria for thrombolytics, transport to closest Stroke Receiving Center.
    a. While en route, the attending EMT and/or paramedic shall contact the physician at the closest Stroke Receiving Center to discuss the appropriateness of diversion

to another facility capable of providing neuro-interventions not available at the closest Stroke Receiving Center.

3. Notify the Stroke Receiving Center as soon as possible of impending arrival with an acute stroke patient, LVO screening results, time signs and symptoms first began, and whether Thrombolytic Exclusion Criteria exists if known.
4. If the EMS unit is a BLS unit; the patient can be transported to the closest appropriate comprehensive stroke center, primary stroke center, or stroke referral center.
5. EMS will respect requests for transport to a specific hospital made by the patient unless the longer transport time is contraindicated by the patient's condition.
    a. Patient/family preference is the highest level of authority and patients/families have the right to choose their destination even if it is not in their best interest. If patients/families request to go a destination hospital that is not prepared to offer the care required, they must be given information to help them make an informed decision, including the associated risks of deciding on an inappropriate destination.

EMS STROKE MANAGEMENT GUIDELINES

EMS organizations are required to work under established patient care guidelines or protocol which are approved by that agencies Medical Director. These guidelines or protocols should be continually reviewed and updated to maintain current standards of care. Local EMS Medical Directors are encouraged to collaborate cardiologists at receiving facilities and formulate management protocols with those physicians/facilities.

INTERFACILITY TRANSFER GUIDELINES

1. Contact an EMS transport service as soon as possible, even if the receiving location not yet known.
    a. Communicate that the patient is a "Time Critical Diagnosis Patient and needs rapid transport."
2. All hospitals (both referral and receiving) are encouraged to have written transfer processes in place whenever possible.
3. Referring hospitals are encouraged to respect requests for transport to a specific hospital (Stroke Receiving Center) made by the patient, and/or consider preexisting patient-hospital system relationships.
    a. Patient/family preference is the highest level of authority and patients/families have the right to choose their destination even if it is not in their best interest. If patients/families request to go a destination hospital that is not prepared to offer the care required, they must be given information to help them make an informed decision, including the associated risks of deciding on an inappropriate destination.

4. Referring hospitals should administer a thrombolytic or transport using the following guidelines:
    a. If thrombolytic cannot be administered, do not delay transport of the patient to Stroke Receiving Center for more than 30 minutes.
    b. If thrombolytic therapy can be administered, the goal for thrombolytic therapy initiation with a target goal of 30-45 minutes from the time the patient arrived to the start of the therapy.
5. Referring hospitals should communicate:
    a. Time last known without acute stroke symptoms.
    b. Neurological exam focusing on LOC and focal deficits.
    c. Consider use of the National Institute of Health Stroke Scale.
    d. Pertinent medical history.
    e. A copy of the CT head scan if possible. May also be sent via the Cloud. (Do not delay transport of patient to wait on copies. Copies can be sent later if needed.)
    f. Lab results.
    g. Evaluation if patient is a candidate for thrombolytic therapy.
6. To not delay a transfer, Referral Centers may send only EMTALA paperwork with the patient. Additional records and/or copies of x-rays may be faxed or sent by courier to the receiving Stroke Center later.
    a. A Sample Inter-Facility Transfer Worksheet can be found in Appendix E.

REFERRING HOSPITAL MANAGEMENT GUIDELINES

Stroke Referral Centers are expected to have in place management protocols to include initial assessment, identification, management, and transfer of stroke patients. Centers are encouraged to consult neurologists at receiving centers and formulate management protocols with those physicians/facilities.

EXPECTATION OF STROKE CENTERS

1. Have in place transfer agreements between Referring and Receiving Centers.
2. Minimize diversion of stroke patients. Only divert a stroke patient if specific lab or equipment needed to provide optimal care for a patient is out of service.

TRAUMA GUIDELINES

TRAUMA ROUTING

EMS organizations are required to work under established patient care guidelines or protocol which are approved by that agencies Medical Director. These guidelines or protocols should be continually reviewed and updated to maintain current standards of

care. The specific routing of trauma patients should follow established CDC Field Triage Criteria (Appendix D)

SPECIAL PATIENTS AND SYSTEM CONSIDERATIONS

For any trauma patients with the following criteria, contact medical control and consider transport to a Trauma Center even if it is not the nearest hospital.

i. Older Adults -Risk of injury/death increases after age 55 years -SBP <110 may represent shock after age 65 -Low impact mechanisms (e.g., ground level falls) may result in severe injury.

ii. Children should be routed to pediatric designated and/or verified trauma centers.

iii. Anticoagulants and bleeding disorders -Patients with head injury are at high risk for rapid deterioration.

iv. Bums -Without other trauma mechanism: triage to burn center facility -With trauma mechanism: triage to trauma center.

v. Pregnancy >20 weeks

vi. EMS provider judgment

1. Patients who are less than 14 years old and who meet the physiologic (pediatric), mechanism of injury or anatomic criteria should be routed to a pediatric trauma center.
2. EMS agencies in the urban/suburban core should develop protocols directing that traumatic cardiopulmonary arrest patients should be taken to the nearest trauma center unless it is out of service. EMS agencies outside of the urban/suburban core should develop protocols directing that traumatic cardiopulmonary arrest patients should be taken to the closest appropriate hospital.
3. When there is more than one adult trauma patient, consider evenly distributing patients among more than one trauma center. If this is not feasible, contact online medical control for routing assistance.
4. When more than one patient less than 14 years old meets physiologic or anatomic criteria per the trauma routing guidelines, contact medical control for routing assistance.
5. EMS agencies should develop protocols directing burn patients that meet burn routing criteria, consider routing directly to an burn center facility.

6. EMS will respect requests for transport to a specific hospital made by the patient unless the longer transport time is contraindicated by the patient's condition. .
7. Patient/family preference is the highest level of authority and patients/families have the right to choose their destination even if it is not in their best interest. If patients/families request to go a destination hospital that is not prepared to offer the care required, they must be given information to help them make an informed decision, including the associated risks of deciding on an inappropriate destination.
8. Prior to initiating transport to the requested facility, the EMT/Paramedic is encouraged to contact the requested receiving facility to ascertain they will accept the patient.
9. EMS units further than 30 minutes from a trauma center consider the feasibility of a medical helicopter for patient's transportation.

Data Collection and Monitoring

MARCER will establish performance measures to evaluate regional performance of TCD patients. This will only be successful if all disciplines within the TCD Plan are willing to share specific data so that outcome measurements can be performed and modifications to the plan made based on findings.

Using this data as a guide and a resource, MARCER will report on three primary evaluation areas: timeliness of care, treatment provided, and outcomes of care. These areas are critical because they allow linking of EMS data and hospital TCD data; they allow for "real time" collection of data focused on process improvement; and they allow for retrospective systemic analyses.

The ultimate goal of collecting this data is to provide actionable information to MARCER members and local EMS operation managers, enabling better care processes and outcomes for TCD patients.

Plan Implementation

It is incumbent on all EMS systems and hospital groups to ask their respective medical directors and governing bodies to formally approve the policies and procedures herein, formalize protocols to reflect the principles in the plan, and develop any necessary forms and procedures to support implementation of the plan.

Success of this system is dependent on the participation of MARCER, EMS and area hospitals.

Appendix A: MARCER Area Hospital TCD Capabilities*

	Trauma Center	Burn Care Facility	STEMI Receiving Center	STEMI Referral Center	Acute Stroke Ready/Missouri Level 3	Primary Stroke Center/Missouri Level 2	Comprehensive Stroke Center/Missouri Level 1
AdventHealth Shawnee Mission			X			X	
AdventHealth Lenexa							
AdventHealth South Overland Park							
AdventHealth College BLVD							
Belton Regional Medical Center	III			X	X		
Carroll County Memorial Hospital				IV			
Cass Regional Medical Center	III			X			
Centerpoint Medical Center	II		II			X	
Children's Mercy Kansas City	I	P	N/A	N/A	N/A		
Cushing Memorial Hospital				X			
Excelsior Springs Hospital							
University of Kansas Hospital	I	A,P	X				X
Kansas City VA Medical Center							
Lafayette Regional Health Center				III	X		
Lee's Summit Medical Center			II			X	
Liberty Hospital	II		II			X	
Menorah Medical Center			X			X	
Miami County Medical Center							
North Kansas City Hospital	II		I			X	
Olathe Medical Center			X			X	
Overland Park Regional Medical Center	II		X			X	
Providence Medical Center			X			X	
Ray County Memorial Hospital					X		
Research Medical Center	I	A	I				X
St. Joseph Medical Center			II			X	
St. John’s Hospital				X	X		
St. Luke's Hospital — East			II			X	
St. Luke's Hospital	I		I				X
St. Luke's Hospital — Northland			II			X	
St. Luke's Hospital — South			X			X	
St. Mary’s Medical Center			II			X	
University Health- TMC	I		II				
University Health- LMC							
Western Missouri Medical Center	III			III	X		

Burn Care Facilities A=Adult and P=Pediatric

Appendix B: Stroke Scale/LVO

Item	FAST-ED Score	Descriptions
Facial Weakness/Asymmetry		**Ask the patient to smile or show teeth or gums**
Symmetrical Movement	0	Facial movement is symmetrical
Asymmetrical Movement	1	Unequal smile or grimace, or obvious facial asymmetry
Arm weakness		**Ask the patient to close eyes & lift the patient's arms together palms up to 90 degrees if sitting and 45 degrees if supine and ask them to hold the position for 10 seconds, then let go.**
Normal	0	Both arms remain up >10 sec. or slowly drift down equally
Mild	1	One arm drifts down in <10 sec. but has antigravity strength
Moderate/Severe	2	Cannot maintain the arm against gravity and drops immediately
Speech Content		**Ask the patient to say a common phrase such as "You can't teach an old dog new tricks." Have the patient name 3 common items.**
Normal	0	Speech content normal AND names 2-3 items correctly (if speech is slurred but makes sense and naming is correct score as normal)
Abnormal	1	Speech content clearly abnormal OR names only 0-1 items correctly
Speech Comprehension		**Ask the patient: "Show me two fingers"**
Normal	0	Patient shows two fingers
Abnormal	1	Patient cannot understand/does not show two fingers
Eye deviation		**Ask the patient to follow your finger while holding their head still**
Absent	0	No deviation, eyes move to both sides equally
Partial	1	Patient has clear difficulty when looking to one side (left or right)
Forced Deviation	2	Eyes are deviated to one side and do not move to the other side (e.g. cannot follow finger)
Denial/Neglect-Weakness		**Ask the patient: "Are you weak anywhere?"**
Normal	0	The patient recognizes that they are weak
Abnormal	1	The patient is weak but does NOT recognize they are weak
Denial/Neglect		**While holding the patient's weak arm, ask the patient: "Whose arm is this?"**
Normal	0	Patient recognizes the weak arm belongs to them
Abnormal	1	Patient does NOT recognize the weak arm belongs to them

FAST-ED

Facial Palsy	1 point
Arm Weakness	2 points
Speech Changes	2 points
Eye Deviation	2 points
Denial/Neglect	2 points

When ≥3, FAST-ED has:
- 0.71 sensitivity
- 0.78 specificity

When ≥4, FAST-ED has:
- 0.61 sensitivity
- 0.89 specificity

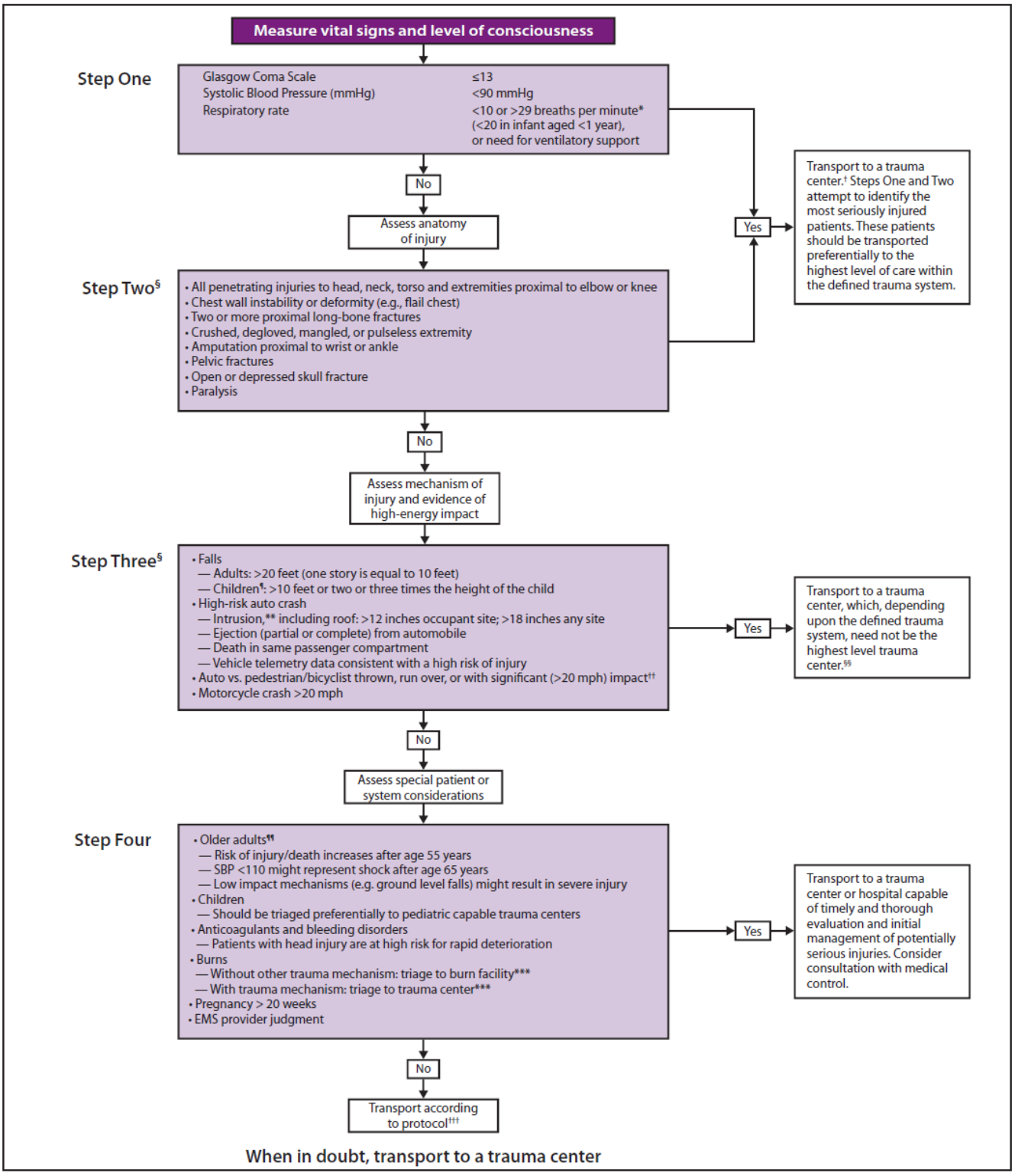
Appendix C: Pediatric Stroke Recommended Guidelines

Acute management of a pediatric patient with concern for acute ischemic stroke should include:

a. Management of airway, breathing, and circulation.
b. Use standardized weight estimation tool if weight unknown.
c. Head flat and midline after assuring airway protective reflexes are intact or if intubated.
d. Avoid hypo and hyper ventilation. Goal ETCo2 40.
e. Goal oxygen saturation >94% and ≤99% in absence of congenital heart disease, provide supplemental oxygen as needed.
    i. Clarify goal oxygen saturation for patients with cyanotic congenital heart disease and provide supplemental oxygen accordingly.
f. Placement of a large bore IV in an antecubital vein, at least 22 gauge for infant/toddler, larger for older children
g. Treat seizures early
    i. Acceptable Treatment for Seizures
    ii. no IV/IO access present
        1. Midazolam IM
            a. <13kg-0.1mg/kg IM x 1 dose
            b. >13-40kg- 5mg IM x 1 dose
            c. >40kg- 10mg IM x 1 dose
    iii. IV/IO access present
        1. Lorazepam (Ativan) 0.1mg/kg IV (max 4mg)
    iv. Acceptable alternative route
        1. Midazolam intranasal (Versed) 0.2mg/kg (max single dose 10mg), divided between nares. May repeat after 5 minutes with 0.3mg/kg intranasal dose. Max 2 doses total.
h. Acute management of fever >37°C
    i. Acetaminophen (Tylenol) 10-15mg/kg rectal or IV, if available. Do not give oral medications en route for suspected stroke.
    ii. Avoid hyperthermia, goal temperature <37.5°C
i. Monitor for and treat hypoglycemia, goal blood glucose >80
    i. Infants ≤ 3mo of age: 2-4ml/kg of D10W IV bolus
    ii. Older infants and children: 5-10ml/kg of D10 or 1-2ml/kgD50IV bolus
    iii. May use pre-established department/unit protocol for treatment of hypoglycemia in children.

Guidelines received from Dr. Jennifer Flint from Children's Mercy Kansas City and Dr. Jacobsen

Appendix D: CDC Trauma Routing



Appendix E: National Guideline for the Field Triage of Injured Patients

RED CRITERIA

High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
• Penetrating injuries to head, neck, torso, and proximal extremities • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor or sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	All Patients • Unable to follow commands (motor GCS < 6) • RR < 10 or > 29 breaths/min • Respiratory distress or need for respiratory support • Room-air pulse oximetry < 90% Age 0–9 years • SBP < 70mm Hg + (2 x age in years) Age 10–64 years • SBP < 90 mmHg or • HR > SBP Age ≥ 65 years • SBP < 110 mmHg or • HR > SBP

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA

Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgment
• High-Risk Auto Crash – Partial or complete ejection – Significant intrusion (including roof) • >12 inches occupant site OR • >18 inches any site OR • Need for extrication for entrapped patient – Death in passenger compartment – Child (age 0–9 years) unrestrained or in unsecured child safety seat – Vehicle telemetry data consistent with severe injury • Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.) • Pedestrian/bicycle rider thrown, run over, or with significant impact • Fall from height > 10 feet (all ages)	Consider risk factors, including: • Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact • Anticoagulant use • Suspicion of child abuse • Special, high-resource healthcare needs • Pregnancy > 20 weeks • Burns in conjunction with trauma • Children should be triaged preferentially to pediatric capable centers If concerned, take to a trauma center

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)

Appendix F: Air Medical Transport Utilization Guidelines

Helicopter Emergency Medical Services (HEMS) or air medical transport is a crucial component of a tiered response in an Emergency Medical System for the expeditious initial care and delivery of the critically ill patient to an appropriate health care facility. The following guidelines should be used for appropriate utilization of air medical transport:

1. General guidelines

    - Patients in need of critical interventions
    - Patients with unstable vital signs, critical injuries, or critical illness Patients in need of intra-transport critical care services
    - Patients in topographically hard-to-reach areas Transport distance is "sufficiently long" Disaster/mass casualty events

2. Trauma guidelines

    - Trauma score < 12, unstable vital signs, significant trauma, multisystem injuries, ejection from vehicle, pedestrian or cyclist struck by vehicle, death in the same passenger compartment, GEMS perception of significant damage to compartment
    - Other considerations, including neurologic, thoracic, abdomen/pelvis, ortho/extremity, and burn specific
    - Patients with near drowning injuries

3. Interfacility transfers

    - Patients have diagnostic and/or therapeutic needs that cannot be met at the referring hospital AND factors such as time, distance, and/or advanced care requirements are not met by GEMS crew's abilities.

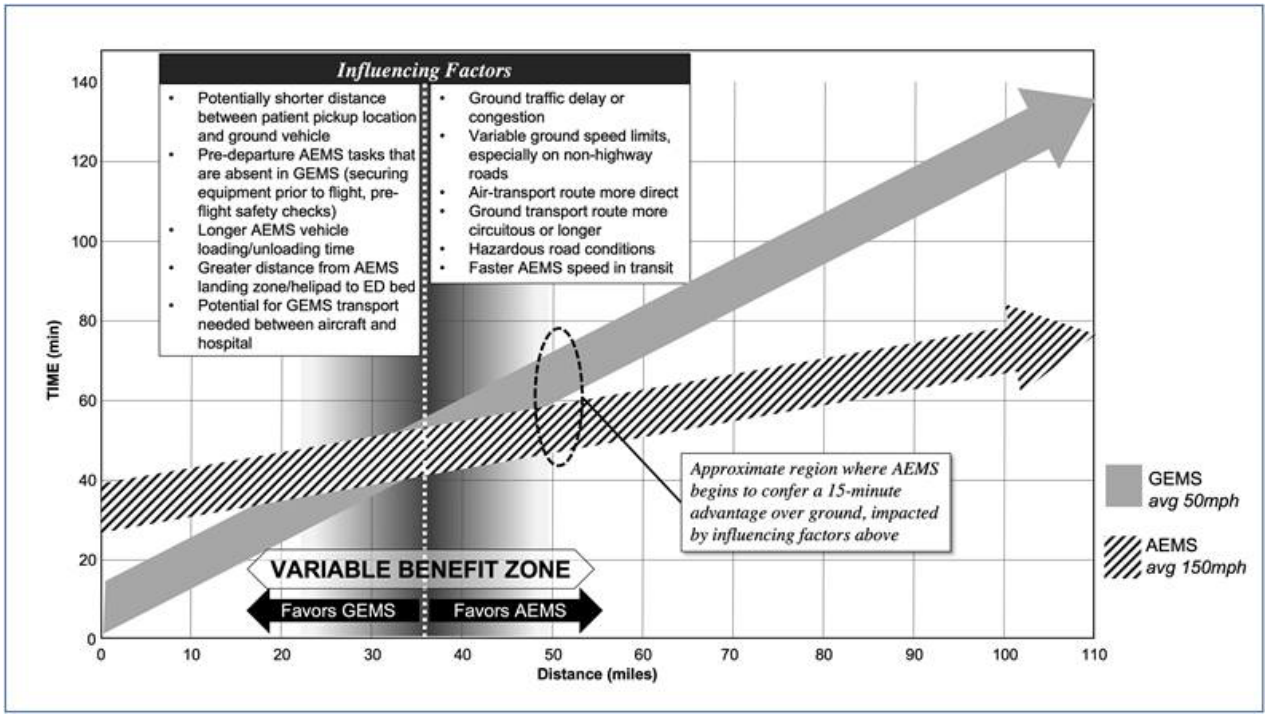
4. Other

    - Patient needs transport for organ salvage Search and rescue
    - In rare cases, if an arrest does not meet criteria for cessation of resuscitative efforts OR in areas where EMS cannot cease such efforts

The above guidelines are an abbreviated summary of the Guidelines on HEMS Use from the National Association of EMS Physicians (NAEMSP).

Lenz, T. J., Kossyreva, E. A., & Colella, M. R. (2019). Helicopter Emergency Medical Services Utilization. Air Medical Journal, 38(4), 261-265. doi: 10.1016/j.amj.2019.03.004.

Reviewed by Missouri State Advisory Council (SAC) on EMS Air Ambulance Subcommittee, Missouri Association of Air Medical Services (MOAAMS) and the Regional Medical Directors Subcommittee of SAC and duly adopted on September 27, 2022 with the accompanying Graphic Variable Benefit Zone that shows when Air EMS begins to confer a 15 minute advantage over ground.



https://www.tandfonline.com/doi/full/10.1080/10903127.2021.1967534

Appendix G: Helicopter Early Launch Process Guidelines

Definition: Helicopter Early Launch Process (HELP) is designed to reduce the window of time to access the patient when said access would be greater 20 minutes due to travel time request for an air ambulance response prior to EMS arrival on scene. The resource request should be coordinated between communications center and EMS.

In the event that time to first medical contact of a responder would be greater than 20 minutes, the communication center should consider the following guidelines as criteria for early helicopter launch.

I. The Helicopter Early Launch Process should be considered when first response EMS is greater than **20** minutes from the ill or injured patient with the following mechanism or conditions:

(The very young and the very old should be given special consideration)

A. **Trauma Patient with apparent significant injury** *following a mechanism or condition such as:

1. Amputation, Crushed or Mangled Extremity
2. Bleeding, Uncontrolled
3. Drowning/Near Drowning
4. Farming/Industrial/Logging Accidents
5. Head Injury with Decreased Level of Consciousness
6. Motor Vehicle Crash (significant examples: Ejection, Rollover, Fatality in Same Vehicle)
7. Motorcycle or ATV crash
8. Paralysis, new
9. Pedestrian Struck by a Motor Vehicle
10. Penetrating Trauma of Head, Chest, Abdomen or Groin
11. Pregnant Patient

B. **Burn Patient**

1. Explosive Mechanism with Burns and/or Traumatic Injuries
2. Facial Burns in Closed Space with Difficulty Breathing or Hoarse Voice

C **Medical Patient**

1. Anaphylaxis or Severe Allergic Reaction
2. Bleeding, Uncontrolled
3. Chest Pain, Severe Non-Trauma or Suspected STEMI
4. Poisoning/Overdose with Severe Decreased Level of Consciousness
5. Respiratory Distress, Severe
6. Seizure, Continuous
7. Stroke, Suspected: Inability to Talk or Difficulty Speaking or New Paralysis on One Side

II. An air ambulance should be considered when it will assist the Time Critical Diagnosis patient in arriving at the appropriate facility during the time window specific to the disease.

Note: These guidelines were developed by the Air Ambulance Subcommittee to be used by agencies that incorporate early launch into their guidelines/protocols.

*The intent of initiation of HELP in situations where patients may meet ACS trauma routing criteria, based on information received by communication center, prior to EMS Access to patient. The goal of HELP is to narrow window of time for the patient to receive definitive care.

Appendix H: Clarifications as recommended by DHSS

1. By approving the MARCER and Missouri Kansas City EMS Region TCD plan, the Missouri Department of Health and Senior Services has waived 19 CSR 30-40.790, entitled Transport Protocol for Stroke and ST-Segment Elevation Myocardial Infarction (STEMI) Patients only.

2. The administration and maintenance of this community plan will be shared between a representative from MARCER and the Kansas City EMS Regional Committee. The representative from MARCER that will serve as the administrator who maintains this plan will be Emergency Services Health and Medical Program manager. The representative from the Kansas City EMS Regional Committee that has responsibility to administer and maintain this plan is the sitting Chair of the Committee.

3. In the STEMI Guidelines of the plan, Page 13, Interfacility Transfer Guidelines, 1. In the current approved plan reads "All centers (both referral and receiving) are encouraged to have transfer agreements in place whenever possible." DHSS advised that this should read "All centers (both referral and receiving) shall have transfer agreements in place." Per DHSS, "Level II, III, and IV centers must have these transfer agreements in place or they will be in violation of 19 CSR 30-40.760 (1)(N)."

4. In the STEMI Guidelines of the plan, Page 14, Expectations of the STEMI Receiving Center, 1. In the current approved plan reads "All centers (both referral and receiving) are encouraged to have a prearranged transfer process in place whenever possible." DHSS advised that this should read "All centers (both referral and receiving) shall have prearranged transfer processes in place." Per DHSS, "Level II, III, and IV centers must have these transfer agreements in place or they will be in violation of 19 CSR 30-40.760 (1)(N)."

5. In the Stroke Guidelines of the plan, Page 16, Interfacility Transfer Guidelines, 2. In the current approved plan reads "All centers (both referral and receiving) are encouraged to have written transfer processes in place whenever possible." DHSS advised that this should read "All centers (both referral and receiving) shall have transfer agreements in place."

5. Although the TCD plan outlines appropriate transport guidelines, Patient/family preference is the highest level of authority and patients/families have the right to choose their destination even if it is not in their best interest. If patients/families request to go a destination hospital that is not prepared to offer the care required, they must be given information to help them make an informed decision, including the associated risks of deciding on an inappropriate destination. These conversations must be documented in the patient record or patient care report.