AFTER ACTION REPORT/IMPROVEMENT PLAN

May 26, 2015

Prehospital Trauma Systems Review

Air Medical Operations

2014 – 2015
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FOUO
Montgomery County Department of Public Safety
After Action Report/Improvement Plan
(AAR/IP)
Air Medical Operations
Pre-Hospital Trauma Systems Review

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EXECUTIVE SUMMARY

Montgomery County Emergency Medical Services (EMS) agencies responded to 83,095 9-1-1 incidents in 2014 (Brown, 2014). Of these a special subset of emergencies involves traumatic type injuries. These injuries involve blunt force or penetrating injuries that are best treated at specialty resource centers called trauma centers. Patients who experience injuries are victims of events such as auto crashes, falls from a height greater than twenty feet, or are victims of shootings or stabbings. These victims have the best chance of surviving and recovering if they can be delivered to a trauma center within the first hour of the onset of their injuries. This “golden hour of trauma” (the first hour after the injury occurs) has been identified as the interval during which definitive care should ideally be delivered to maximize patient survival (Blumen & Gordon, 1989).

Timely access to definitive care has been shown to improve outcomes after traumatic injury and is considered to be a critical component of modern trauma care (Doucet, et al., 2013). When this involves a trauma patient, it is critical that this be a carefully orchestrated process that gets the patient to a trauma center and into the hands of a trauma surgeon.

The trauma system involves several primary components which are reassessed and evaluated on a continuum throughout the flow of a call (Campeau, 2008) as follows:

- Activation of the 9-1-1 system / first care by first responders and bystanders
- First contact at the point of injury/wounding by EMS units
- Appropriate triage and provision of life-saving interventions (LSI) at the scene by EMS personnel
- Appropriate assessment for on-scene specialty resources to stabilize the patient for movement
- Transport destination and transport mode decision making based on direct consultation with a medical command physician
- Enroute patient care
- Delivery to first receivers at the appropriate facility

This report summarizes the ground and air EMS system in Montgomery County and provides recommendations to ensure that the trauma patient receives the best of care at the scene, and is transported in the most expeditious manner to the appropriate facility in accordance with the PA Dept. of Health Statewide EMS treatment protocols and regional EMS office policies.

The Montgomery County Regional EMS Helicopter Utilization Review Committee was developed to assess and evaluate Montgomery County’s trauma patient evaluation and referral protocols, ground transport of trauma patients, and air medical transport of trauma patients’ capabilities.
The review committee was composed of numerous and diverse agencies, appointed by the EMS Advisory Council President James Smale. The names and titles are listed:

- James Smale, EMT At Large - Council President
- Pat Doyle, President-Montgomery County Ambulance Association-Council Member
- Dr. Ben Usatch, Regional Medical Director, Council Member
- Dr. Stephen Pulley, Emergency Department Physician-Mercy Hospital- Council Member
- Ken Schauder, Past President MC Ambulance Association – Bryn Athyn Ambulance
- Tim Dunigan-MCEMS Prehospital Systems Coordinator-Data Staff support-non voting
- David Paul Brown-MCEMS Deputy Director Public Safety-Administration support-non voting

The review committee discussed the current utilization of ground and aeromedical resources, their licensed base of operations, and the effectiveness of the current policy on use of air medical resources.

Based on the review committee’s deliberations, the following recommendations were developed for Montgomery County EMS helicopter service utilization:

- **Recommendation 1:** Open moratorium on air medical response areas to discuss the dispatch recommendation of each licensed helicopter in Montgomery County to be assigned areas nearest to them when called.

- **Recommendation 2:** EMS Advisory Council to move for the Emergency Communications Division (ECD) to utilize point to point dispatch within the current computer aided dispatch system to analyze the distance in miles from the air base to the exact latitude and longitude of the scene, when technologically feasible.

- **Recommendation 3:** Assign whole Townships to appropriate air service bases by color coding municipalities in relation to the air service with the nearest geographical base to cover the entire municipality.

  *Note: This is determined by evaluating the air miles of the air service that covers the entire municipality, or the greatest percentage portion of the selected municipality.*

- **Recommendation 4:** Council accepts the MAC recommendation to deny the request for change of category 1 trauma consults to State MAC.

- **Recommendation 5:** Council accepts the MAC recommendation to deny the request to State MAC for change of the ten nautical mile exception.

- **Recommendation 6:** Council to endorse the continuance of quarterly QA/QI meetings on all helicopter flights, and publish quarterly and annual data on all trauma flights.

- **Recommendation 7:** Council to endorse the production and distribution of educational materials for Trauma Ground/Air Ambulance Utilization on a regular basis.

- **Recommendation 8:** Reset a five year moratorium to ensure a stable air medical system.
The purpose of this report is to analyze committee recommendations, identify strengths to be maintained and built upon, identify potential areas for further improvement, and support the development of timely corrective actions.

**Major Strengths**

The major strengths identified during this review are as follows:

- There is a well-developed, mature ground and air EMS system in the County.
- All helicopter flights are reviewed for quality assurance/quality improvement.
- There are several Level 1 or Level 2 Trauma Centers within 45 minutes’ drive time for most parts of Montgomery County, there are also specialty centers for pediatrics and burns as well as hyperbaric chambers.

**Primary Areas for Improvement**

Throughout the review and discussions, several opportunities for improvement in Montgomery County’s ability to respond to the trauma patient incidents were identified. The primary areas for improvement, including recommendations, are as follows:

- There should be proper utilization of all air medical resources in accordance with State Treatment Protocols
- The aeromedical system should be evaluated on a five year recurring basis
- There should be a comprehensive listing of all trauma centers and specialty trauma destinations published on an annual basis

The special EMS Advisory Council meetings, Medical Advisory Committee discussions, review of all pertinent data, and the helicopter committee recommendations were a good opportunity to hear differing views to formulate the best procedures and policies for every trauma patient. The dialogue was passionate at times, but remained focused on proper medical command physicians’ direction and for the best interests of the trauma patient.
SECTION 1: COMMITTEE OVERVIEW

Review Details

Review Name
Prehospital Trauma Systems Review – Air Medical Operations

Type of Review
A complete review of the ground and air medical trauma program was conducted.

Review Start Date
December 2014

Review End Date
May 2015

Duration
Six Months

Location
Montgomery County, PA

Sponsor
Montgomery County Department of Public Safety

Program
Montgomery County EMS Helicopter Utilization

Policy & Protocols Reviewed
PA Dept. of Health Statewide EMS Protocols (2015):

- 170 – Patient Destination – Ground Transport (BLS)
- 180 – Trauma Patient Destination Criteria (BLS)
- 190 – Trauma Patient Destination – Air Transport (BLS)
- Memo – County of Montgomery, dtd. Feb. 1, 2013 Requesting Air Ambulance Services Category 2 Trauma

Capabilities
FEMA - Emergency Triage and Pre-Hospital Treatment
Helicopter Utilization Review Committee Leadership

James Smale, EMT At Large - Council President
Pat Doyle, President-Montgomery County Ambulance Association-Council Member
Dr. Ben Usatch, Regional Medical Director, Council Member
Dr. Stephen Pulley, Emergency Department Physician-Mercy Hospital- Council Member
Ken Schauder, Past President MC Ambulance Association-Bryn Athyn Ambulance
Tim Dunigan-MCEMS Prehospital Systems Coordinator-Data Staff support-non voting
David Paul Brown-MCEMS Deputy Director Public Safety-Administration support-non voting

Participating Organizations

- Abington Memorial Hospital-Trauma Center
- Bryn Athyn Ambulance
- Cheltenham EMS
- Community Ambulance Ambler
- Einstein Hospital
- Emergency Nurses Association
- Goodwill Steam Fire Company # 1
- Horsham Fire Ambulance
- Jefferson Hospital
- JeffStat Helicopter
- Lankenau Hospital
- Lansdale Hospital
- Lehigh Valley Health Network
- Lehigh Valley Health Network - MEDEVAC
- Lower Providence Police Department
- Mid-Atlantic MEDEVAC Helicopter-Limerick
- Mercy Suburban Hospital
- Montgomery County EMS Advisory Council
- Montgomery County Medical Advisory Committee (MAC)
- Paoli Hospital-Trauma Center
- PennStar Helicopter
- Penn Trauma Center
- Plymouth Community Ambulance
- Pottstown Goodwill Ambulance
- Second Alarmer’s Rescue Squad
- Upper Perkiomen Ambulance
- Volunteer Medical Service Corp. Lansdale Ambulance
Number of Participants

- Hospitals: (9) including Trauma Centers
- Montgomery County Regional EMS Council: (12) Members
- Montgomery County EMS Agency Representatives: (34) responders
- Others: (15) physicians and hospital staff
SECTION 2: REVIEW COMMITTEE DESIGN SUMMARY

Review Purpose and Design

The Montgomery County Regional EMS Helicopter Utilization Review Committee was developed to assess and evaluate Montgomery County’s trauma patient evaluation and referral protocols, ground transport of trauma patients, and air medical transport of trauma patients’ capabilities.

Overview, Objectives, Capabilities, and Authority

Overview

Montgomery County Emergency Medical Services (EMS) agencies responded to 83,095 9-1-1 incidents in 2014 (Brown, 2014). Of these a special subset of emergencies involves traumatic type injuries. These injuries involve blunt force or penetrating injuries that are best treated at specialty resource centers called trauma centers. The patients that experience injuries such as auto crashes, falls from a height greater than twenty feet, or are shot or stabbed have the best chance of surviving and recovering, if they can be delivered to a trauma center within the first hour of the onset of their injuries. The “golden hour” (the first hour after the injury occurs) has been identified as the interval during which definitive care should ideally be delivered to maximize patient survival (Blumen & Gordon, 1989).

Timely access to definitive care has been shown to improve outcomes after traumatic injury and is considered to be a critical component of modern trauma care (Doucet, et al., 2013). When this involves a trauma patient, it is critical that this be a carefully orchestrated process that gets the patient to a trauma center and into the hands of a trauma surgeon. This report will summarize the ground and air EMS System in Montgomery County and provide recommendations to ensure that the trauma patient receives the best of care at the scene, and is transported in the most expeditious manner to the appropriate trauma center in compliance with State treatment protocols and regional EMS office policies.

Authority – EMS Advisory Council Role

- 1021.104 (1) Organizing, maintaining, implementing, expanding and improving the EMS system within the geographic area for which the regional council has been assigned responsibilities

- 1021.104(3) Advising PSAPs and municipal and county governments as to EMS resources available for dispatching and recommending dispatch criteria that may be developed by the Department, or by regional EMS council as approved by the Department.

- 8109(c)(1) Assist the Department in achieving the Statewide and regional EMS system
components and goals as described under 8104 EMS system programs

- 8104(a)(6) Access and transportation to trauma centers and specialty care receiving facilities

- 8104(a)(8) Utilization of appropriate personnel, facilities and equipment of each entity providing EMS

- 8109(c)(9) Advise public safety answering points and municipal and county governments as to EMS resources available for dispatching and recommend dispatch criteria that may be developed by the department, or the council as approved by the Department.
SECTION 3: ANALYSIS

Topic 1: Moratorium on Air Medical Services

Topic Summary: The MAC voted to recommend that the moratorium be opened to enable a full review of the aeromedical trauma transport program.

Observation 1.1: This review was deemed necessary since conditions have changed since the moratorium was initially placed. The number and location of the air medical programs has increased, as well as the number of accredited trauma centers.

References:
1. The aeromedical industry has expanded considerably during the last several decades with an estimated 400,000 helicopter EMS missions flown annually and almost 900 dedicated aeromedical programs in the United States alone (Doucet, et al., 2013).
2. The principle that time from injury to definitive care is a critical factor in the survival of severely injured patients drives the perceived benefit of helicopter transport in the trauma population (Doucet, et al., 2013).

Analysis: The EMS Advisory Council placed a moratorium to changes in helicopter response areas in 2006 and was enacted for a five year period. After five years the moratorium was renewed in 2011 for an additional three year period.

Based on the Council moratorium ending in 2014, a helicopter committee was formed at the December 2014 EMS Advisory Council meeting, to study the current services and make recommendations to the EMS Advisory Council.

Recommendation 1: Open moratorium on air medical response areas to discuss the dispatch recommendation of each licensed helicopter in Montgomery County to be assigned areas nearest to them when called.
Topic 2: Point-to-Point Helicopter Dispatch

Topic Summary: The helicopter Committee recommended that helicopters licensed in Montgomery County be activated to respond based on nearest air medical unit to the trauma scene. The recommendation should ensure that all services have the same amount of processing time, including crew assembly, weather check, pre-flight warm up and pilots’ checking of coordinates (PA Dept. of Health, 2008).

Observation 2.1: Based on the current conditions where there exists three licensed air medical bases of operation, all three agencies should be afforded equal opportunities to be summoned to air transport emergencies that are near their base of operations.

References:
1. Appendix D-Point to Point Map of Montgomery County-Depicting 3 air bases, and a midpoint line, noted in green that indicates areas that the computer aided dispatch system at the Montgomery County PSAP would recommend first due dispatch by geographical location of helibase.

Analysis: To maintain compliance with the state treatment protocols, Protocol # 180 C. 2. Last sentence refers to; “The PSAP should initially contact the air ambulance service that is based closest to the scene.”

Recommendation 2: EMS Advisory Council to move for the Emergency Communications Division (ECD) to utilize point to point dispatch within the current computer aided dispatch system to analyze the distance in miles from the air base to the exact latitude and longitude of the scene, when technologically feasible.
Topic 3: Air Medical Response Zones Review

**Topic Summary:** The helicopter Committee recommended that helicopters licensed in Montgomery County be activated to respond based on nearest air medical unit to the trauma scene. The recommendation should ensure that all services have the same amount of processing time, including crew assembly, weather check, pre-flight warm up and pilots’ checking of coordinates (PA Dept. of Health, 2008). The whole municipality approach is slightly less precise than the point to point method.

**Observation 3.1:** Based on the current conditions where there exists three licensed air medical bases of operation, all three agencies should be afforded equal opportunities to be summoned to air transport emergencies that are near their base of operations.

**References:**
1. Appendix E- Recommended Helicopter Zones by Municipality-Depicts 3 air bases, and 5, 10, and 15 mile circles to show areas closest to helibase. Shaded areas under the response circles show the municipalities suggested for each air service to be primarily dispatched. This approach uses the whole municipality approach.

**Analysis:** By assigning whole municipalities to a particular air service, would keep the spirit of the existing method of computer aided dispatch intact. It also is easy to graphically display the areas using a color coded county map.

**Recommendation 3:** Assign whole Townships to appropriate air service bases by color coding municipalities in relation to the air service with the nearest geographical base to cover the entire municipality.

*Note: This is determined by evaluating the air miles of the air service that covers the entire municipality, or the greatest percentage portion of the selected municipality.*
Topic 4: County MAC to petition State MAC to Change Medical Command Call Requirements for Category I Trauma Patients

Topic Summary: A request was made at the special EMS Advisory Council meeting in February 2015, to request a revision to the State Treatment Protocols in relation to a requirement to contact the closest trauma center for consultation with a medical command physician.

Observation 4.1: Discussion involved the current Protocol BLS # 180, which refers to categories of trauma patients based on the severity of injuries. The requirement is for ground EMS crews to contact a medical command physician at the closest trauma center to collaborate on the method of transportation for a category 2 trauma patient. Category 2 trauma patients may benefit with an evaluation at a trauma center, but mechanism alone is not strongly related to serious patient injuries (180-BLS Policy, B. 2.)

References:

Analysis: The request from a Council member asked to change the state treatment protocol # 180 to require that ground EMS crews contact the closest trauma center for medical advice on every trauma patient including Category 1, which is indicative of a serious head or penetrating injury.

The current State Protocol # 180 enables ground EMS crews to determine if the patient will benefit from ground or air transport without consulting with a medical command physician.

The county MAC was to consider seeking approval from the State MAC to change the requirement to call medical command for only about category II trauma patients, to requiring a call to medical command for all category I or category II traumas. The county MAC voted to deny referring the request to State MAC.

Recommendation 4: Council accepts the MAC recommendation to deny the request for change of category 1 trauma consults to State MAC.
Topic 5: County MAC to Petition State MAC to Change 10 Nautical Mile Rule for Air Ambulance Utilization

Topic Summary: A request was made at the special EMS Advisory Council meeting in February 2015, to petition the State MAC to revise the State Treatment Protocols in relation to a provision that allows an air medical helicopter to fly to a trauma center other than the closest if the delta is 10 nautical miles or less.

Observation 5.1: Discussion involved the current Protocol BLS # 190, which allows the air service to fly to a more distant trauma center if the difference is ten nautical miles or less. This is often the case when a helicopter owned and operated by a particular service will fly patients to their parent hospital trauma center, often times with a Level 1 trauma center, bypassing a Level 2 center. (190-BLS Policy, B. 4.)

References:

Analysis: The county MAC was to consider seeking approval from the state MAC to change the state treatment protocol concerning what is known as the ten nautical mile rule.

The current State treatment protocols allow an air ambulance to bypass the nearest trauma center, if their parent trauma center is less than ten miles further away.

There has been universal concurrence and it is supported in the State Treatment Protocols that pediatric and burn trauma patients should be directed to the specialty trauma centers for pediatrics and burns. The county MAC voted to deny the request being referred to the state MAC.

Recommendation 5: Council accepts the MAC recommendation to deny the request to State MAC for change of the ten nautical mile exception.
Topic 6: Maintain Quarterly Stakeholder QA Meetings to Review Air Medical Helicopter & Trauma Patient Utilization

Topic Summary: EMS Council continues to request pertinent data on the frequency and utilization of aeromedical resources. MCEMS publishes quarterly and annual data on flights including municipality of call, ground and air services involved, incident times, and receiving facility.

Observation 6.1: The QA/QI review process has existed for years, and continues to evaluate additional bits of data including category of trauma, times to receiving facilities, flight origin linked to the trauma center receiving the patient.

References:
1. Appendix L-BLS Treatment Protocol 180, pg. 4, Performance Parameters A. and B.

Analysis: Council requested that additional criteria be evaluated, including helicopter ETE, ETA, flight service use of status web page, CAT I and CAT II trauma criteria including contact with medical command for CAT II, on scene times greater than or equal to ten minutes without entrapment, and any reports of delays in arrival at the scene by the air service.

Recommendation 6: Council to endorse the continuance of quarterly QA/QI meetings on all helicopter flights, and publish quarterly and annual data on all trauma flights.
Topic 7: Regional Production of Educational Materials for Air Ambulance Utilization

**Topic Summary:** MCEMS should continue to educate EMS agencies, providers, physicians, and hospitals and trauma centers to ensure that everyone is current with the Treatment Protocols and policies and procedures concerning air medical operations and trauma.

**Observation 7.1:** The number of flights has decreased markedly with education and awareness. The quarterly committee reports and sharing of best practices with all stakeholders helps to improve the overall process.

**References:**

**Analysis:** Regular educational information including helpful maps and data sharing with best practices should be distributed on a regular basis.

MCEMS will produce educational materials for distribution to all stakeholders concerning the proper use and procedures for air medical evacuation flights.

These informational materials could include information on contacting medical command for CAT II mechanism of injury and transport by ground to trauma centers within thirty to forty five minutes from scene.

**Recommendation 7:** Council to endorse the production and distribution of educational materials for Trauma Ground/Air Ambulance Utilization on a regular basis.
Topic 8: Reinstall a Five Year Moratorium on any changes to the Air Medical Response Areas

**Topic Summary:** The air medical system is an important component of the overall EMS System. When modifications are made, it is important that the recommendations are given ample opportunity to be used without additional variables introduced.

**Observation 8.1:** In previous adjustments to the air medical response system, there appeared to be value in to allow the plans to be measured after the adjustment. The QA/QI committee will follow all flights closely and publish quarterly reports on the proper use and outcomes of the trauma patients transported by an air unit. The moratorium is an effort to ensure that the plan is allowed to be carried out without any “hop scotching” occurring with licensed agencies attempting to rapidly change their licensed station-helibase locations.

**References:**

**Analysis:** The moratoriums in 2003, 2006, and 2011 stabilized the air delivery systems by enabling the helicopters to respond to calls in areas that they had been assigned. This enabled the services to validate their ability to adequately serve the areas they were assigned.

**Recommendation 8:** The EMS Advisory Council to move to introduce a new five year moratorium to any changes in the air medical response areas. The EMS Advisory Council reserves the right to revisit during this period should conditions warrant.
SECTION 4: CONCLUSION

The Montgomery County EMS System is a mature, and response oriented program that handles over 83,000 calls annually. This data shows that EMS responds and brings medical treatment and transport to more than ten percent of the County population every year. Within these numbers, there are a few hundred patients that fit the definition of serious trauma. Of the serious trauma patients, 182 (unadjusted) were flown to trauma centers with the balance transported by ground EMS units.

The EMS system has markedly changed and grown in the last ten years. All licensed EMS agencies have achieved the advanced life support license to bring emergency department care to the patients’ side. There are additional accredited trauma centers that have come on line. The state EMS treatment protocols have been revised to include the provision that trauma patients that can reach a trauma center within forty five minutes by ground should be driven to trauma centers when feasible.

The statewide EMS treatment protocols also include a mandatory mechanism to require EMS providers to consult with a medical command physician at the closest trauma center when they encounter a patient that has some indicator of possible trauma referred to the mechanism of injury. The physician and the on scene EMS personnel can then discuss the need to transport by ground or by air. Lastly, as indicated earlier in this report, air medical programs have expanded to over 900 programs across the United States. Here in Montgomery County, the air services expanded from two to three organizations, and added an air base at the Lansdale Hospital.

The quality assurance/quality improvement programs have been working for several years in reducing the number of air medical flights from an annual total of 1,200 in 1994 to the 182 flights (unadjusted) in 2014. The recommendations include the use and contact for response to all three currently licensed air bases, based on their licensed locations and their proximity to the scene of the trauma patient.

The EMS Advisory Council is a required organization under the State Department of Health-Bureau of EMS and is obligated to follow the EMS Systems Act of 2009, and its Rules and Regulations. The EMS Advisory Council members are appointed by the Commissioners of Montgomery County and advise the professional staff of the Montgomery County EMS office, a Division of the Department of Public Safety.

Considering all the data and requests to review the ground and air trauma policies and procedures, a committee was formed to review and make recommendations to the EMS Advisory Council. Looking at all the documents and discussing these matters at multiple meetings, the committee kept their focus on three primary factors. First and foremost, the committee wanted to make certain that any recommendations were patient driven; to make the best choices for the best interest of the trauma patient.

Secondly, the committee sought to ensure that recommendations were made by medical
professionals, physicians and other system stakeholders that are an integral part of this EMS system.

Finally, the committee made certain that the recommendations were in accordance with the State Treatment Protocols that are formulated and approved by a group of physicians from across the Commonwealth, and approved by the State EMS Medical Director, Dr. Doug Kupas.

The recommendations contained herein account for the changing environment of the ground and air trauma systems and keep the EMS System in compliance with the current state EMS treatment protocols. The best care and transport for the trauma patient are reflected in these recommendations.

The preferable sequence for trauma assessment, care and transport should be in compliance with the state EMS treatment protocols as follows:

1. Ground transport to trauma centers within forty five minutes when feasible

2. Air transport of critical trauma patients, category I injuries, when the Patients’ needs are best served by air medical transport, these could include but not limited to, air medical personnel skills, entrapment or entanglement of the patient that prohibits immediate ground transport, or other specialty needs of the patient that can be best mitigated by an air team, (i.e. advanced airway or possible amputation).

3. Ground EMS personnel must consult with an emergency medical command physician at the closest trauma center for category II injuries, to determine the method (ground or air) and destination of transport to a trauma center.
MONTGOMERY COUNTY OFFICE OF EMS
Medical Advisory Committee SUMMARY MINUTES
Meeting Date: March 26, 2015
Start: 10:00 a.m.  End: 12:00 a.m. estimate

Location: Public Safety Training Campus
1175 Conshohocken Rd.
Plymouth Meeting Pa.
Room: 208

Dr Usatch posed the three questions that were being asked of the Medical Advisory Committee to make recommendations:

1. Do we continue with the Moratorium or do we divide the county up equally amongst the three air agencies giving each a first due area?
   The physicians voted a recommendation to Open the Moratorium

2. For all flights Category I or II do we require a paramedic to call medical command at the closest trauma center
   Physicians voted to recommend to leave the protocol as is currently stated

3. Do we request a waiver or a change for an air agency to transport to the closest trauma center
   Physicians voted to recommend to leave protocol as stated for two reasons:
   - Reason of Safety
   - Not enough credible data to support a change for the entire state or our region.

Adjourn
MONTGOMERY COUNTY OFFICE OF EMERGENCY MEDICAL SERVICES
SPECIAL EMS ADVISORY COUNCIL MINUTES
AIR MEDICAL OPERATIONS

MEETING DATE: Tuesday, February 17, 2015
Room 101 Montgomery County Training Campus
1175 Conshohocken Road, Conshohocken, PA 19428

Absent  Dr. Ben Usatch, Regional Medical Director
Present  James Smale, Jr., EMT, EMT At Large
Present  Dr. Stephen Pulley, ED Physician, Pa ACEP
Excused  Dr. Rob Jubelirer, Emergency Trauma Surgeons
Absent  Patrick Doyle, Liaison MontCo Ambulance Association
Present  Mike Campeggio, Liaison MontCo Fire Companies
Present  Chief Bud Carroll-Elect Liaison MontCo Police Chiefs
Present  David Paul Brown, Montgomery County EMS, Director
Present  Kevin Thomas, Paramedic-At-Large
Present  Margaret McGoldrick, M.C. Hospital Administrators
Absent  Terry Ciccarone, Emergency Nurses Association
Absent  Steve Roskos-Pending-MontCo Ambulance Administrators
Absent  Matt McGuire-General Public Member- Consumer

Guests:  Renee Bates-Second Alarmers Rescue Squad 380
         Jim Yurchak-Abington Hospital
         Steve Hare-Penn Trauma
         Steve Schwarz-Harleysville EMS
         Adam Zwieslewski-Mid-Atlantic MEDEVAC
         John Roussis-JeffStat
         Guy Barber-JeffStat
         Jon Detweiler-JeffStat
         Brian Sweeney-JeffStat
         John Heleniak-VMSC-Lansdale Ambulance
         George Koenig-JeffStat

MCEMS Staff:
         Tim Dunigan, Brian Pasquale, Ed Martin-arrived 1320 hours
I. **Existing Air Medical Response**
   a. County currently served by three licensed air medical programs, JeffStat, Mid Atlantic (now Tenet) MEDEVAC, and PennStar.
   b. Current bases of operation include, Hatfield Township at Lansdale Hospital, Limerick Township at Heritage Field, and Whitpain Township at Wings Field respectively.
   c. Flight Data Totals for the following years were noted: 2011-413 flights, 2012-369 flights, 2013-262 flights and 2014-182 flights a thirty percent reduction from 2013 total.
   d. Flights by air service calendar year 2014-PennStar-100, Tenet-45, JeffStat-37. The busiest three months included April-24 flights, November-20 flights, and May and September tied with 18 flights.
   g. Destination Totals 2014 patients flown to the following Trauma centers-HUP-72, CHOP-28, Hahnemann-21, Lehigh Valley-17, Thomas Jefferson-15, Reading-12, Paoli-6, Abington-3, Saint Christopher’s-3.

II. **State EMS Treatment Protocols**
   a. Protocol #170 Basic Life Support-Patients with traumatic injuries and who meet criteria for transport to a trauma center-Follow Trauma Patient Destination Protocol # 180
   b. Protocol # 180 Basic Life Support-Transport to a Level 1 or Level 2 Trauma center. Category 2 trauma cases, transport to the closest trauma center if within 45 minutes OR contact medical command at the closest trauma center for authorization for air medical transport if needed
   c. Air Medical Trauma-Protocol # 190 Excerpts-
      i. A1 Transport to closest Level 1 or 2 trauma center by transport distance
      ii. A3 Ten mile exception transport by air ambulance to a level 1 or 2 trauma center other than the closest is permitted if the difference between the air transport distance to the
other center and air transport distance to the closest center is ten nautical miles or less.

III. **Current Helicopter Locations:**
   a. Stated above under #1b.

IV. **EMS Advisory Council Role:**
   a. EMS Act of 1985 Title 28 - Rules and Regulations included the following excerpts:
      i. 1021.104(1) Organizing, maintaining, implementing, expanding and improving the EMS system within the geographic area for which the regional council has been assigned responsibilities
      ii. 1021.104(3) Advising PSAPs and municipal and county governments as to EMS resources available for dispatching and recommending dispatch criteria that may be developed by the Department, or by regional EMS council as approved by the Department
   b. Title 35-Part VI EMS Chapter 81 Rules and Regulations (Effective April 2014) included the following excerpts:
      i. 8109(c)(1) Assist the Dept in achieving the Statewide and regional EMS system components and goals as described under 8104 EMS system programs
      ii. 8104(a)(6) Access and transportation to trauma centers and specialty care receiving facilities
      iii. 8104(a)(8) Utilization of appropriate personnel, facilities and equipment of each entity providing EMS
      iv. 8109(c)(9) Advise public safety answering points and municipal and county governments as to EMS resources available for dispatching and recommend dispatch criteria that may be developed by the
department, or the council as approved by the
Department.

V. Parameters for Selection of Air Medical Areas:
   a. Response Distances from licensed air base
   b. Transmittal of Dispatch Information
   c. Latency in Dispatch Method
   d. Warmup-Launch Times

VI. Recommendations for Air Medical Response Areas:
   a. Dispatch by Geography-Closest Licensed Air Base
   b. Include Whole Municipalities
   c. Dispatch by select and recommend by Air Base

VII. Public Comments

Additional documents were distributed including flight data reports for 2014
and previous years flight totals. There were also copies of the state
Treatment Protocols distributed including #s 170-180-190. Lastly, there was
a Power Point slide presentation with the data about flight numbers, and
other items on the agenda.

Group requested a report on flights by municipality of origin and destination
hospital.

Council members present suggested that a map be prepared that would
display three equal service areas that would begin around the existing air
bases.

If air services are given response areas are we prepared to do it for ground
ambulance service areas? It was discussed that air service areas are unique
because they cover multiple municipalities, individual ground ambulance
response areas are in the hands of the local elected officials by resolution
under the Township and Borough codes.

Helicopters are secondary responders there was an acknowledgement that in
most cases there are already ground advanced life support-paramedics
rendering aid at the scene.
A council member discussed flying when appropriate, it is logical to take care of patients in Montgomery County, it is believed that trauma centers are providing a service that families may prefer to stay in the county. There was an acknowledgement that some things need to go “downtown” (Philadelphia Trauma Centers) millions of dollars are spent to support trauma programs.

An ambulance executive asked “Where do we call for command?” They continued that they called command to obtain permission to fly to a specialty center and were instructed to transport to the nearby trauma center by ground.

It was generally agreed that a map should be produced to indicate to ground ambulance agencies that shows by municipality the closest trauma center to phone/radio for command, and a map showing the municipalities where the trauma occurs, that can reach particular trauma centers within forty five minutes’ drive time. (State Treatment protocol)

Ten nautical mile exception rule is contained within State Treatment Protocol # 190 and states that an air service can return to their home trauma center is the difference in two trauma centers is 10 nautical miles or less.

It was noted that the State Medical Advisory Committee (STMAC) had briefly discussed the ten nautical mile rule and unofficially agreed that there was no need to change the ten mile rule during any revisions to the protocols.

It was suggested that the ten mile exception be changed to reflect the “closest trauma center language” as the ground EMS units must follow, “Patients want to be close to home”.

The medical command physician’s in the emergency department make the best call on destination.

It was acknowledged that helicopters are used as a patient acquisition tool, those facilities that spend money on helicopters, get the patients.

It was noted that council should use caution on the ten nautical mile rule, helicopters have their own protocol.
The group proposed that four key items be continued:

1. Educate EMS Agencies to call the closest trauma center as indicated in the State Protocol-a reference map will be prepared so the responders can easily determine which trauma center will be the closest based on the municipality they are in.
2. EMS agencies should ground level 2 trauma patients to the trauma centers if within 45 minutes by ground travel.
3. A map depicting what helicopter to dispatch based on helicopter base geography will be prepared for further discussion.
4. Further discussion needs to occur to determine the proper method of deciding which trauma center to fly to.

It was acknowledged that specialty cases including peds, burns, spinal and other specialty patients are addressed in the state protocols as needing to be transported to specialty centers.

MCEMS will convene quarterly QA meetings with the helicopter services to review and conduct QA/QI activities on all flights.

Request to review trauma center contacts for western areas of County-It was discussed that some areas noted to contact Paoli, may have a natural flow and easier travel routes to Lehigh Valley, request to revise draft map is accepted.

The council members present acknowledged that they would like to see a proposed map with 3 response areas outlined for recommendation to dispatch helicopters to scene responses by closest geography. MCEMS will prepare a map for further discussion.

Council members noted that they will need to plan what their next steps would be if another air service moved into the County, or if an air service disbands.

A council member asked the air services what their business models were?
PennStar noted that hangar space is a commodity and that they have lease agreements at Wings Field—a 10-year lease and they have made capital improvements at their base.

Tenet noted they currently lease office quarters and hangar space for the MEDEVAC ship at Heritage Field-Limerick.

JeffStat noted that they have a long-term relationship at Lansdale, and that Jefferson is Abington. Helicopter base is stable. A suggestion was made that perhaps JeffStat should park at Abington facility. JeffStat representatives said they haven’t looked at that. JeffStat personnel did mention that Abington Health owns the Lansdale Hospital and its corresponding helicopter base.
**APPENDIX B: HELICOPTER UTILIZATION REVIEW COMMITTEE EVENTS SUMMARY TABLE**

**Table D.1: Review Committee Events Summary**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Type of Event, Activity or Action</th>
<th>Event/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>02/17/2015</td>
<td>1300</td>
<td>Special EMS Advisory Council Meeting</td>
<td>Council members and EMS agencies met to discuss relevant issues concerning air-trauma response</td>
</tr>
<tr>
<td>03/04/2015</td>
<td>1230</td>
<td>Regular EMS Advisory Council Meeting</td>
<td>Discussed helicopter utilization report</td>
</tr>
<tr>
<td>03/26/2015</td>
<td>0930</td>
<td>Special MAC Meeting</td>
<td>MAC considered three questions from February 17 meeting-voted on previous discussion issues</td>
</tr>
<tr>
<td>04/1/2015</td>
<td>0900</td>
<td>Helicopter Committee Meeting</td>
<td>Committee members met to review data and discuss strategy</td>
</tr>
<tr>
<td>05/27/2015</td>
<td>1130</td>
<td>Helicopter Committee Meeting</td>
<td>Review and comment on final draft report</td>
</tr>
</tbody>
</table>
### APPENDIX C: TERMS AND DEFINITIONS

**Table F.1: Terms and Definitions**

<table>
<thead>
<tr>
<th>Acronym/Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR</td>
<td>After-Action-Review</td>
</tr>
<tr>
<td>Air Ambulance</td>
<td>A rotorcraft specifically designed, constructed or modified and equipped, used or intended to be used and maintained or operated for the purpose of providing emergency medical care to and air transportation of patients.</td>
</tr>
<tr>
<td>Ambulance</td>
<td>A ground, water, or air vehicle which is maintained or operated for the purpose of providing EMS to and transportation of patients.</td>
</tr>
</tbody>
</table>
| Bureau                       | (i) The Bureau of Emergency Medical Services of the Department<br>
|                              | (ii) If the Department is reorganized, the office within the Department assigned primary responsibility for administering the act.                                                                     |
| Commonwealth EMS             | Commonwealth Emergency Medical Services Medical Director - A physician who is approved by the Department to advise and formulate policy on matters pertaining to EMS.                                           |
| Medical Director             | Commonwealth Emergency Medical Services Medical Director - A physician who is approved by the Department to advise and formulate policy on matters pertaining to EMS.                                           |
| Department                   | Commonwealth Emergency Medical Services Medical Director - A physician who is approved by the Department to advise and formulate policy on matters pertaining to EMS.                                           |
| EMS Agency                   | Emergency medical services agency-An entity that engages in the business or service of providing EMS to patients within this Commonwealth by operating one or more of the following:<br>
<p>|                              | i. An ambulance service&lt;br&gt;ii. An air ambulance service&lt;br&gt;iii. An ALS ambulance&lt;br&gt;iv. An ALS squad vehicle &lt;br&gt;v. An intermediate ALS ambulance&lt;br&gt;vi. An intermediate ALS squad vehicle&lt;br&gt;vii. A BLS ambulance&lt;br&gt;viii. A BLS squad vehicle&lt;br&gt;ix. A QRS&lt;br&gt;x. An ALS water ambulance&lt;br&gt;xi. An intermediate ALS water ambulance&lt;br&gt;xii. A BLS water ambulance&lt;br&gt;xiii. An EMS agency dispatch center&lt;br&gt;xiv. A special operations EMS service, which includes a tactical EMS service, a wilderness EMS service, an urban search and rescue service, and a mass gathering EMS service.&lt;br&gt;xv. Another vehicle or service that provides EMS outside of a health care facility as prescribed by the Department by regulation. |
| EMS System                   | Emergency Medical Services System- The arrangement of personnel, facilities and equipment for the delivery of EMS in a geographic area to prevent and manage emergencies.                                    |
| Golden Hour                  | The hour immediately following traumatic injury in which medical treatment to prevent irreversible internal damage and optimize the chance of survival is most effective.                                         |</p>
<table>
<thead>
<tr>
<th>Acronym/Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Advisory Committee (MAC)</td>
<td>An advisory body formed to advise a regional EMS council or the Advisory Board on issues that have potential impact on the delivery of emergency care.</td>
</tr>
<tr>
<td>Medical Command</td>
<td>(i) Medical oversight including orders, given by a medical command physician to an EMS provider to do either of the following</td>
</tr>
<tr>
<td></td>
<td>a. Provide immediate medical care or transportation to prevent loss of life or aggravation of physiological or psychological illness or injury.</td>
</tr>
<tr>
<td></td>
<td>b. Withdraw or withhold treatment</td>
</tr>
<tr>
<td></td>
<td>(ii) Medical command is given in a prehospital setting, interfacility transport setting or emergency care setting in a hospital.</td>
</tr>
<tr>
<td>Medical Command Facility Medical Director</td>
<td>A medical command physician who meets the criteria established by the Department to assume responsibility for the direction and control of equipment and personnel at a medical command facility.</td>
</tr>
<tr>
<td>Medical Command Physician</td>
<td>A physician who is certified by the Department to give medical command to EMS providers.</td>
</tr>
<tr>
<td>Medical Coordination</td>
<td>A system which involves the medical community in all phases of the regional EMS system and consists of the following elements:</td>
</tr>
<tr>
<td></td>
<td>(i) Designation of a regional EMS medical director.</td>
</tr>
<tr>
<td></td>
<td>(ii) Oversight to ensure implementation of all medical requirements, with special emphasis on patient triage and medical treatment protocol.</td>
</tr>
<tr>
<td></td>
<td>(iii) Effective emergency medical planning and recommendation for Department recognition of online command facilities with medical command physicians who give medical command to EMS providers.</td>
</tr>
<tr>
<td></td>
<td>(iv) Transfer and medical treatment protocols.</td>
</tr>
<tr>
<td></td>
<td>(v) Technological innovations that support the training and operations of physicians giving orders to EMS providers.</td>
</tr>
<tr>
<td></td>
<td>(vi) Technological innovations that support the training and operations of the EMS program and an effective process for accountability—for example, records, case review and audits.</td>
</tr>
<tr>
<td>PSAP</td>
<td>Public Safety Answering Point</td>
</tr>
<tr>
<td></td>
<td>(i) The Pennsylvania Emergency Management Agency-approved first point at which calls for emergency assistance from individuals are answered.</td>
</tr>
<tr>
<td>Acronym/Term</td>
<td>Meaning</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>(ii)</td>
<td>A PSAP is operated 24 hours a day.</td>
</tr>
<tr>
<td>Peer Review</td>
<td>The evaluation of health care providers of the quality and efficiency of services ordered or performed by EMS providers and physicians who direct or supervise EMS providers under the act and the regulations of the Department.</td>
</tr>
<tr>
<td>Peer Review Committee</td>
<td>A committee of health care providers who engage in peer review under the act.</td>
</tr>
<tr>
<td>Physician</td>
<td>An individual who has a currently registered license to practice medicine or osteopathic medicine ion this Commonwealth.</td>
</tr>
<tr>
<td>Quality Assurance Action</td>
<td>An action taken by a quality assurance reviewer or EMS agency dispatch center supervisor after a quality assurance review to correct or improve call-taking or dispatching deficiencies identified by the quality assurance review.</td>
</tr>
<tr>
<td>Quality Assurance Review</td>
<td>A quality assurance process that is used to assess the job performance of a call-taker or a dispatcher.</td>
</tr>
<tr>
<td>Radio Activity</td>
<td>Call-taking, dispatching and communicating on a public safety radio frequency.</td>
</tr>
<tr>
<td>Regional EMS Council</td>
<td>Regional emergency medical services council-A nonprofit incorporated entity or appropriate equivalent that is assigned by the Department to:</td>
</tr>
<tr>
<td></td>
<td>(i) Plan, develop, maintain, expand and improve the EMS systems within a specific geographical area of this Commonwealth.</td>
</tr>
<tr>
<td></td>
<td>(ii) Coordinate those systems into a regional EMS system.</td>
</tr>
<tr>
<td>Regional EMS Medical Director</td>
<td>Regional emergency medical services medical director-the medical director of a regional EMS council.</td>
</tr>
<tr>
<td>Service Area</td>
<td>The geographic area in which an EMS agency routinely provides EMS.</td>
</tr>
<tr>
<td>Statewide EMS Protocols</td>
<td>Statewide emergency medical services protocols-Written EMS protocols adopted by the Department that have Statewide application to the delivery of EMS by EMS providers.</td>
</tr>
<tr>
<td>Trauma Center</td>
<td>A facility accredited as a trauma center by the Trauma Foundation.</td>
</tr>
<tr>
<td>Trauma Foundation</td>
<td>The Pennsylvania Trauma Systems Foundation, a nonprofit Pennsylvania corporation whose function is to accredit trauma centers.</td>
</tr>
</tbody>
</table>
APPENDIX D: MAP – POINT TO POINT

Recommended Point-to-Point Helicopter Dispatch Zones

Draft for approval May 2015
APPENDIX E: MAP – RECOMMENDED HELICOPTER RESPONSE ZONES BY MUNICIPALITY
APPENDIX F: MAP – 2014 TRAUMA PATIENT FLIGHTS BY MUNICIPALITY & NUMBER OF FLIGHTS
APPENDIX G: MAP –2014 HELICOPTER FLIGHTS BY MUNICIPALITY
APPENDIX H: MAP –2014 HELICOPTER FLIGHTS BY MUNICIPALITY (CLOSER VIEW)
APPENDIX I: ANNUAL HELICOPTER FLIGHT TOTALS

2011-2014

Helicopter Flight Totals

<table>
<thead>
<tr>
<th>Month</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>% change 2014 vs 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>28</td>
<td>30</td>
<td>21</td>
<td>14</td>
<td>-33%</td>
</tr>
<tr>
<td>Feb</td>
<td>29</td>
<td>20</td>
<td>17</td>
<td>11</td>
<td>-35%</td>
</tr>
<tr>
<td>Mar</td>
<td>31</td>
<td>32</td>
<td>24</td>
<td>11</td>
<td>-54%</td>
</tr>
<tr>
<td>Apr</td>
<td>34</td>
<td>25</td>
<td>25</td>
<td>24</td>
<td>4%</td>
</tr>
<tr>
<td>May</td>
<td>31</td>
<td>34</td>
<td>25</td>
<td>18</td>
<td>-39%</td>
</tr>
<tr>
<td>Jun</td>
<td>55</td>
<td>37</td>
<td>19</td>
<td>16</td>
<td>-16%</td>
</tr>
<tr>
<td>Jul</td>
<td>44</td>
<td>29</td>
<td>29</td>
<td>11</td>
<td>-42%</td>
</tr>
<tr>
<td>Aug</td>
<td>37</td>
<td>42</td>
<td>18</td>
<td>11</td>
<td>-39%</td>
</tr>
<tr>
<td>Sep</td>
<td>34</td>
<td>50</td>
<td>25</td>
<td>18</td>
<td>-38%</td>
</tr>
<tr>
<td>Oct</td>
<td>39</td>
<td>39</td>
<td>23</td>
<td>16</td>
<td>-37%</td>
</tr>
<tr>
<td>Nov</td>
<td>30</td>
<td>37</td>
<td>24</td>
<td>20</td>
<td>-17%</td>
</tr>
<tr>
<td>Dec</td>
<td>21</td>
<td>23</td>
<td>12</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>413</td>
<td>369</td>
<td>262</td>
<td>182</td>
<td>-30.53%</td>
</tr>
</tbody>
</table>

Graph showing annual helicopter flight totals from 2011 to 2014, with a bar chart and a line graph.
APPENDIX J: ANNUAL HELICOPTER FLIGHT TOTALS

2009-2011

Helicopter Flight Totals - as of 12/31/2011

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>36</td>
<td>47</td>
<td>35</td>
<td>28</td>
</tr>
<tr>
<td>Feb</td>
<td>56</td>
<td>30</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Mar</td>
<td>55</td>
<td>48</td>
<td>42</td>
<td>31</td>
</tr>
<tr>
<td>Apr</td>
<td>54</td>
<td>51</td>
<td>63</td>
<td>34</td>
</tr>
<tr>
<td>May</td>
<td>64</td>
<td>58</td>
<td>56</td>
<td>31</td>
</tr>
<tr>
<td>Jun</td>
<td>67</td>
<td>50</td>
<td>57</td>
<td>55</td>
</tr>
<tr>
<td>Jul</td>
<td>72</td>
<td>58</td>
<td>71</td>
<td>44</td>
</tr>
<tr>
<td>Aug</td>
<td>77</td>
<td>45</td>
<td>58</td>
<td>37</td>
</tr>
<tr>
<td>Sep</td>
<td>56</td>
<td>53</td>
<td>75</td>
<td>34</td>
</tr>
<tr>
<td>Oct</td>
<td>56</td>
<td>45</td>
<td>57</td>
<td>39</td>
</tr>
<tr>
<td>Nov</td>
<td>36</td>
<td>49</td>
<td>54</td>
<td>30</td>
</tr>
<tr>
<td>Dec</td>
<td>37</td>
<td>45</td>
<td>54</td>
<td>21</td>
</tr>
<tr>
<td>TOTAL</td>
<td>666</td>
<td>579</td>
<td>632</td>
<td>413</td>
</tr>
</tbody>
</table>
APPENDIX K: BLS PROTOCOL 170

PATIENT DESTINATION – GROUND TRANSPORT
STATEWIDE BLS PROTOCOL

Purpose:
A. This protocol shall ensure that when a ground ambulance service transports a patient in the prehospital setting the patient is transported to the most appropriate receiving facility, while considering the patient’s preference.

Criteria:
A. All patients, in the prehospital setting, who require ground ambulance transport to a receiving facility.

Exclusion Criteria:
A. Interfacility transport – Patients who are being transported from one acute care hospital to another.
B. Patients with traumatic injuries and who meet criteria for transport to a trauma center – Follow Trauma Patient Destination Protocol #180.

Policy:
A. Patients transported from prehospital scenes

1. Transport to closest hospital.* Unless specifically permitted by this protocol, patients transported by ground ambulance shall be transported to the closest receiving facility. For the purpose of this protocol, a reference to “closest receiving facility” shall be construed to mean the licensed acute care hospital that is closest to the scene in terms of estimated drive time.

2. Patient choice exception.* There may be many reasons why a patient may choose one facility over another; these may include but are not limited to, preexisting relationship with a physician, a receiving facility, a medical service (e.g., dialysis service), or a health insurance plan. Transport by ground ambulance to a facility other than the closest receiving facility is permitted if the patient or other person with legal authority to act for the patient (hereafter “legal representative”) expresses a preference for transport to a different facility. This is subject to the following:
   a. The ground EMS crew may advise the patient or the patient’s legal representative that he/she has a choice in destination; however, the ground EMS crew may not suggest to a patient that a more distant facility would be better for the patient, except for the conditions covered by specific exceptions in this protocol. The exact level and capacity of any given licensed acute care facility may change due to circumstances unknown to the EMS provider; therefore it is not appropriate for the EMS provider or the EMS agency to exert their preference into the patient destination decision.
   b. The patient’s choice must be reasonable. EMS agencies are not required to transport patients to more distant facilities to accommodate a patient’s choice if the additional transport distance is not reasonable. EMS agencies should have a policy that defines which receiving facilities are within a reasonable transport distance from their usual 911 response area. Such a policy should balance the patient’s right to choose a facility that is not the closest with excessive transport times that substantially decrease the ability of the EMS agency to provide 911 coverage for their usual response area.

3. Multiple mass casualty incidents (MCI). This does not imply that all patients in an MCI must be transported to the closest hospital. At a mass casualty incident, individuals within the incident command structure (e.g., transport officer) should communicate with receiving facilities to determine the capacity for patients at each center and should distribute seriously ill patients as appropriate.

4. Weather conditions exception. Severe weather conditions, as determined by the EMS vehicle operator and the EMS agency management, may make it hazardous to transport the
Category I or Category II Trauma Patient exception. \(^5\) Follow the Trauma Patient Destination Protocol (#180) for a patient that meets the Trauma Patient Destination Criteria for transport to an accredited trauma center.

- Contact medical command if the patient or a person with legal authority to act for the patient refuses transport to the closest appropriate trauma center per Trauma Patient Destination Protocol #180.

STEMI exception. \(^3\) A ground ambulance may transport a patient with ECG evidence of an ST-elevation myocardial infarction to the closest receiving center capable of providing emergency percutaneous coronary intervention (PPCI).

- Appropriate STEMI-receiving centers include facilities that are either accredited as a Mission Lifeline STEMI (Heart Attack) Receiving Center by the American Heart Association or accredited as a Chest Pain Center with PCI by the Society of Cardiovascular Patient Care or identified by the EMS region to have PPCI capabilities.
- It is reasonable to bypass a closer facility and transport directly to a center with emergency PPCI capabilities if the ground transport time is < 45 minutes.
- If facility capabilities are not known or if the EMS provider believes that the patient may not be stable for the extended travel time to the closest center with PPCI capability, the EMS provider should contact a medical command physician to assist with destination decision.
- Follow Chest Pain/Suspected Acute Coronary Syndrome protocol # 501/5001.
- Contact medical command if the patient or a person with legal authority to act for the patient refuses transport to the closest appropriate center with PPCI capabilities.

Stroke exception. \(^3\) A ground ambulance may transport a patient with suspected acute stroke to the closest primary stroke center.

- The Department of Health maintains a current list of certified primary stroke centers (which includes comprehensive stroke centers) on the PaDOH website.
- It is reasonable to bypass a closer facility and transport directly to a DOH recognized primary stroke center if the ground transport time is < 45 minutes.
- If facility capabilities are not known or if the EMS provider believes that the patient may not be stable for the extended travel time to the closest certified primary stroke center, the EMS provider should contact a medical command physician to assist with destination decision.
- Follow Suspected Stroke protocol # 705/7006.
- Contact medical command if the patient or a person with legal authority to act for the patient refuses transport to the closest certified primary stroke center.

Pediatric exception. \(^3\) A ground ambulance may transport a pediatric patient (14 years of age or younger) to the closest receiving center with inpatient pediatric capabilities if the patient is believed to be stable for the anticipated transport time and if the difference in transport time is reasonable.

Closest receiving facility on “diversion” exception. \(^3\) A ground ambulance may transport a patient to the next closest receiving facility if the closest center is on “divert.” The ground ambulance service may not consider a receiving facility to be on divert unless that facility has notified the ground ambulance service of the divert condition through the local EMS region.
10. **Medical command exception.** Transport by ground ambulance to a facility other than the facility suggested by this protocol if directed by a medical command physician because the medical command physician is presented with medical circumstances that lead the medical command physician to reasonably perceive that a departure from the prior provisions in this protocol is in the patient’s best interest. This may occur in the following situations:
   a. The medical command physician determines, in conjunction with the closest receiving facility, that anticipated specialty care is not available at the closest receiving facility (e.g., hyperbaric oxygen, critical care, post-cardiac arrest care, burn care, specialty pediatric care, etc.)
   b. The medical command physician determines that the patient has a condition that should be treated at the closest receiving facility.

11. **Medical command assistance.** If the crew of a ground ambulance has any question regarding the facility to which a patient is to be transported or whether the patient is stable enough for transportation to a further facility that has been requested by the patient or his/her legal representative, the crew shall contact a medical command facility for assistance. Ideally, this medical command facility will be either the medical command facility at the closest receiving facility or at the closest facility with special capabilities for the patient or the EMS agency’s usual centralized medical command facility.
   a. The ground EMS provider communicates the request to a medical command physician and, if the medical command physician has a reasonable cause to believe that the difference in estimated transport time could adversely affect the patient’s condition or recovery, the air medical crew or medical command physician provides that information to the patient or legal representative.
   b. The medical command physician determines that the patient or the patient’s legal representative is alert and oriented and communicates an understanding of the potential adverse consequences to the patient if the request is followed.

B. **Contact with receiving facility.** Communicate with the receiving facility as soon as possible to provide patient information and an estimated time of arrival. The Medical Command Contact protocol #601/6001 will differentiate whether an EMS notification or medical command contact should be used to communicate patient information to the receiving facility. Provide this information to the receiving facility as soon as possible, since the information may affect the mobilization of various resources within the facility in preparation for the arrival of the patient. The mobilization of these resources may vary among facilities.

**NOTES:**

1. ‘Receiving facility’ refers to a hospital that is currently licensed in this Commonwealth and similarly recognized facilities in adjacent states.

2. These exceptions are not applicable if the patient does not have an adequate airway and cannot be adequately ventilated, has rapidly worsening vital signs, or has absence of vital signs. Under these circumstances, the patient shall be transported by the fastest possible means to the receiving facility.

3. The ambulance crew need only have a good faith belief that the person has legal authority to make the decision for the patient, provided the crew is without knowledge of facts negating that authority.

**Performance Parameters:**

A. Review PCRs for patients not transported to closest facility for specific documentation of patient choice or other appropriate reason for not transporting to closest facility.
Authority:

A. This protocol applies to all persons regulated under the EMS Act when they are involved with the transport of a patient by ground ambulance.

B. This protocol is not meant to restrict EMS agencies from using appropriate destinations that are alternatives to hospitals when part of a mobile integrated healthcare/ community paramedic program that is consistent with care delivered under the EMS Systems Act of 2009.
**APPENDIX L: BLS PROTOCOL 180**

Pennsylvania Department of Health Operations
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**TRAUMA PATIENT DESTINATION CRITERIA**
Assess patient for any one of the following

**Physiologic Criteria:**
- Patient does not follow commands (GCS Motor ≤ 5)
- Hypotension, even a single episode (SBP < 90 mm Hg)
- Respiratory rate <10 or >29 breaths/minute or need for ventilator support (<20 in age < 1 year)

**Anatomic Criteria:**
- Penetrating injury to head, neck, torso, and extremities proximal to elbow or knee (unless obviously superficial)
- Chest wall instability or deformity (for example, flail chest)
- Two or more proximal long-bone (humerus or femur) fractures
- Crushed/degloved/mangled or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fractures
- Paralysis (spinal cord injury)

**CATEGORY 1 TRAUMA**
- Requires immediate transport to a trauma center (Level 1 or 2), if within 45 minutes
- Otherwise, transport to a Level 3 (preferred) or Level 4 trauma center if patient can arrive at the Level 3 or Level 4 center within 45 minutes or before an air ambulance can arrive to the patient's location
- Notify Trauma Center ASAP (including category and ETA)

**CATEGORY 2 TRAUMA**
Either:
- Contact Medical Command at closest Trauma Center (Level 1, 2, or 3) for authorization for air medical transport if needed.
- OR
- Transport by ground to closest Trauma Center (Level 1, 2, or 3) if within 45 minutes
- Otherwise, transport to closest Level 4 Trauma Center (if within 45 minutes)

**Mechanism of Injury:**
- Falls
- Adult: > 20 feet (one story = 10 feet)
- Children: > 10 feet or 2-3 x height of child
- High Risk Auto Crash
- Passenger compartment intrusion, including roof: > 12 in occupant site or > 18 in into compartment any site
- Ejection (partial or complete) from automobile
- Death in same passenger compartment
- Auto vs. pedestrian/bicyclist thrown, run over, or significant (>20 mph) impact
- Motorcycle crash > 20 mph

Other factors combined with traumatic injuries:
- Elder Adults: SBP<110 may indicate shock after age 65
- Anticoagulants or bleeding disorder
- Burns with trauma mechanism
- Pregnancy (>20 weeks)
- Finger amputation

**CATEGORY 3 TRAUMA**
Transport to closest appropriate receiving facility:
- Frequently reassess for Category 1 or 2 criteria
- Contact medical command, if doubt about appropriate destination

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After Action Report/Improvement Plan (AAR/IP)
Air Medical Operations
Pre-Hospital Trauma Systems Review

Pennsylvania Department of Health Operations 180–BLS – Adult/Peds

TRAUMA PATIENT DESTINATION
STATEWIDE BLS PROTOCOL

CRITERIA:
A. All patients, in the prehospital setting, with acute traumatic injuries.

EXCLUSION CRITERIA:
A. Patients who are being transported from one acute care hospital to another.
B. Patients who do not have acute traumatic injuries or patients with a medical problem that is more serious than any associated minor acute traumatic injuries.
C. Patients transported by air ambulance. Air ambulance personnel will use the Statewide Air Medical Transport Trauma Patient Destination Protocol #190.

POLICY:
A. Extremely critical patients that are rapidly worsening:
   1. Patients with the following conditions should be transported as rapidly as possible to the closest receiving hospital:
      a. Patients without an adequate airway, including patients with obstructed or nearly obstructed airways and patients with inhalation injuries and signs of airway burns.
      b. Patients that cannot be adequately ventilated.
      c. Patients exsanguinating from uncontrollable external bleeding with rapidly worsening vital signs (for example, a patient with severe hypotension and rapid bleeding from a neck or extremity laceration, that cannot be controlled).
      d. Other patients, as determined by a medical command physician, whose lives would be jeopardized by transportation to any but the closest receiving hospital.
   2. The receiving facility should be contacted immediately to allow maximum time to prepare for the arrival of the patient.
B. All other patients with acute traumatic injuries: Use accompanying flow chart to determine patient’s trauma triage category, and transport accordingly:
   1. Category 1 trauma patient destination [These anatomic or physiologic criteria are strongly correlated with severe injury and the need for immediate care at a trauma center, when possible]
      a. Transport patient to the closest trauma center (Level 1 or 2) \[\text{by the method that will deliver the patient in the least amount of time if patient can arrive at the closest Level 1 or 2 trauma center in } \leq 45 \text{ minutes. These patients should only be taken to a level 3 (preferably) or level 4 trauma center when the patient can arrive at a level 3 or 4 trauma center by ground in less time than it will take for an air ambulance to arrive at the patient’s location. It is generally best for these patients to be taken to a trauma center, but if they cannot reach any trauma center in a reasonable time (e.g. 45 minutes by ground), they should be transported to the closest ED. Consider contacting medical command to assist with this decision.}
      b. Transport patient by ground if driving time to a Level 1 or 2 trauma center is \leq 45 minutes. Consider air transport if either:
         1) Air transport will deliver the patient to the Level 1 or 2 trauma center sooner than ground transport, or
         2) Patient has a GCS \leq 8, and air ambulance crew will arrive at patient in less time than the time to transport to closest trauma center.
      c. Communicate patient report and ETA to receiving trauma center as soon as possible, because this permits mobilization of the trauma team prior to the patient’s arrival.
   2. Category 2 trauma patient destination [These patients may benefit from evaluation and treatment at a trauma center, but mechanism of injury alone is not strongly related to serious patient injuries. If ground transport to a trauma center (Level 1, 2, or 3) can be accomplished]
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[In ≤ 45 minutes, air transport is generally not necessary for these patients who do not meet anatomic or physiologic trauma triage criteria.]

a. If air ambulance transport is thought to be needed, contact medical command (if communication capability permits) at closest trauma center. If communication with medical command at closest trauma center is not possible, contact medical command at closest non-trauma center if possible.

b. Reassess patient’s condition frequently for worsening to Category 1 trauma criteria.

c. Transport patient to the closest Level 1, 2, or 3 trauma center, if patient can arrive at this center in ≤ 45 minutes. If a Level 1, 2, or 3 trauma center can’t be reached within 45 minutes, then preference should be given to transport to a Level IV trauma center over other community hospitals. It is generally best for these patients to be taken to a trauma center, but if they cannot reach any trauma center in a reasonable time (e.g. 45 minutes by ground), they should be transported to the closest ED. Consider contacting medical command to assist with this decision or to authorize air transport.

d. Communicate patient report and ETA to receiving trauma center as soon as possible, because some trauma centers may mobilize a trauma team for Category 2 trauma patients.

3. Category 3 trauma patients: [Transportation of these patients to the closest receiving facility is generally acceptable.]

a. Transport to appropriate local receiving hospital

b. Reassess patient frequently for worsening to Category 1 or 2 criteria.

C. Air medical transport considerations:

1. When choosing transport by air, in addition to the actual transport time, which is clearly faster by air, EMS providers should consider the amount of time required for arrival of an air ambulance, patient preparation by the air medical crew, and patient loading.

2. When air ambulance transport is indicated, EMS providers must request an air ambulance through the local PSAP, without requesting a specific air ambulance service. The incident command system, when in place, should be used to accomplish this request. The PSAP should initially contact the air ambulance service that is based closest to the scene.

3. The air ambulance may bring equipment and personnel with resources that are not available on the ground ambulances. These may be useful in the following situations:

a. Patients with GCS ≤ 8 may benefit from advanced airway techniques that the air medical crew can perform.

b. Air ambulance services may transport specialized medical teams for the treatment of unusual situations (for example, severe entrapment with the possibility of field amputation).

4. Prolonged delays at scene while awaiting air medical transport should be avoided.

a. If an air ambulance is not available due to weather or other circumstances, transport the patient by ground using policy section B to determine destination.

b. If patient is not entrapped, transport to an established helipad (for example a ground helipad at the closest receiving hospital, or FAA helipad at an airport, or other predetermined landing zone) if the ETA to the helipad is less than the ETA of the air ambulance to the scene.

5. Air ambulances will transport patients with acute traumatic injuries to destinations consistent with the Air Ambulance Trauma Patient Destination Protocol #190, and these patients will generally be transported only to a Level 1 or 2 center.

D. Considerations related to contact with medical command:

1. When medical command is required for a Category 1 or 2 trauma patient, contact a medical command facility accessible to the EMS provider using the following order of preference:

a. The receiving trauma center if the destination is known and that center is also a medical command facility.
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b. The closest trauma center with a medical command facility.
c. The closest medical command facility.

2. If the patient will be transported by air ambulance, the air ambulance crew will determine the destination based upon the Statewide Air Medical Trauma Patient Destination Protocol.

3. Transport by ambulance to a facility other than the closest appropriate trauma center is permitted if directed by a medical command physician if the medical command physician is presented with medical circumstances that lead the medical command physician to reasonably perceive that a departure from the prior provisions in this protocol is in the patient's best interest. This may occur in special situations including the following:
   a. Specialty care is required that is not available at the closest trauma center (e.g. pediatric trauma center resources or burn center resources).
   b. The closest appropriate trauma center is on "diversion" based upon information from that center.
   c. The patient or other person with legal authority to act for the patient refuses transport to the closest appropriate trauma center.

Notes:

1. Patients in cardiac arrest who have penetrating trauma or are in third trimester (>24 weeks) of pregnancy should be taken to the closest trauma center if time to arrival at the closest trauma center is 15 minutes or less. Otherwise, patient should be transported to the closest hospital.

2. Transport should generally not be delayed while awaiting the arrival of ALS service or an air ambulance unless the ALS service or air ambulance has a confirmed ETA to the scene that is less than the ETA to the closest hospital.

3. Although these categories may be useful in identifying patients who should be transported to a trauma center during a mass casualty incident, patient transport prioritization should follow the system identified in the regional/local mass casualty incident plan.

4. "Trauma Center" refers to a Level 1, 2, 3, or 4 Trauma Center that is currently accredited in this commonwealth and similarly qualified trauma centers in adjacent states. The most current Department lists of these resources should be used for reference. This definition of trauma center applies throughout this protocol.

5. Pediatric patient considerations: Patients that are 14 years of age or younger should be transported to the closest pediatric trauma center (Level 1 or 2 Pediatric Trauma Center) if the patient’s condition is not extremely critical (see policy section B.1. above) and the transport time to the pediatric trauma center is no more than 45 minutes.

6. If the patient is not entrapped, EMS providers should generally not wait on scene for an air ambulance if the ETA of the air ambulance is longer than the ground transport time to the closest hospital’s helipad. Established helipads are generally safer than scene landing zones, and the resources of the adjacent hospital are available if the air ambulance is delayed or has to abort the flight. When using a helipad that can be accessed without entering a hospital, the patient’s transport should not be delayed by stopping for evaluation within the hospital. If there is a significant delay in the arrival of the air ambulance, the patient should be taken to the hospital’s ED for stabilization. Contact with medical command may be used if doubt exists about whether the patient should be evaluated in the hospital’s ED.

7. This does not apply to hospital rooftop helipads that require access through the hospital. If a patient must be taken through a hospital to access their helipad, EMTALA requirements may cause a delay while the patient stops for an evaluation in the ED. EMS providers should avoid accessing these receiving facilities for the use of their helipad unless the patient meets the criteria of extremely critical patients who are worsening rapidly as defined in Policy section B.1. above.

Performance Parameters:
A. Review all cases where patient meets criteria for Category 1 or 2 Trauma for appropriate destination and appropriate use of air transport.
B. Review on-scene time of all patients meeting Category 1 or Category 2 criteria. Consider possible benchmark of <10 minute on-scene time at in at least 90% of non-entrapped cases. Review all cases where on-scene time is > 10 minutes for appropriateness of care and documentation of reason for prolonged on-scene time.

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APPENDIX M: BLS PROTOCOL 190

Pennsylvania Department of Health Operations 190 - BLS - Adult/Peds

TRAUMA PATIENT DESTINATION – AIR TRANSPORT STATEWIDE BLS PROTOCOL

Purpose:
A. This protocol shall ensure that when an air ambulance service has been contacted to transport a patient in the prehospital setting, and that patient has sustained an acute traumatic injury, the patient is transported to the most appropriate receiving facility.

Criteria:
A. All patients, in the prehospital setting, with acute traumatic injuries for which air ambulance transport has been requested.

Exclusion Criteria:
A. Patients who are being transported from one acute care hospital to another.
B. Patients who do not have acute traumatic injuries, or patients with a medical problem that is more serious than any associated minor acute traumatic injuries.

Policy:
B. Trauma patients transported from prehospital scenes
1. Transport to closest Level 1 or Level 2. Unless specifically permitted by this protocol, trauma patients transported by air ambulance shall be transported to the closest Level 1 or 2 trauma center without distinguishing between Level 1 and Level 2 centers. For the purpose of this protocol, a reference to "closest trauma center" shall be construed to mean the Level 1 or 2 trauma center that is closest to the patient in terms of air transport distance.

2. Multiple/mass casualty incidents (MCI). This does not imply that all patients in an MCI must be transported to the closest Level 1 or 2 trauma center. At a mass casualty incident, individuals within the incident command structure (e.g., transport officer) should communicate with receiving trauma centers to determine the capacity for patients at each center and should distribute seriously ill patients as appropriate. If all patients transported by air will not be accommodated at the closest Level 1 or 2 center, then consideration should be given to transporting patients who are related to each other to the same trauma center if the center can accommodate those patients.

3. Weather conditions exception. Transport by air ambulance to a trauma center other than the closest Level 1 or 2 center is permitted if the pilot determines that weather conditions prohibit air travel to the closest trauma center.
   a. In this case, transport shall proceed to the closest trauma center (Level 1 or 2 preferred) permitted by weather conditions.
   b. If air transport to the closest trauma center accessible due to weather will take longer than ground transport to the closest trauma center, the patient shall be transported by ground ambulance.

4. Ten-mile exception. Transport by air ambulance to a Level 1 or 2 trauma center other than the closest center is permitted if the difference between the air transport distance to the other center and air transport distance to the closest center is ten nautical miles or less.

5. Pediatric exception. An air ambulance may transport a pediatric patient (14 years of age or younger) to the closest pediatric trauma center if the difference between the air transport distance to the pediatric center and the air transport distance to the closest Level 1 or 2 trauma center is 30 nautical miles or less.

6. Burn patient exception. An air ambulance may transport a patient with serious burns to the closest burn center if the difference between the air transport distance to the burn center
and the air transport distance to the closest trauma center is 30 nautical miles or less. Additionally:

a. If there is no burn center within the additional 30 nautical miles of air transport distance and the air medical crew determines that the patient’s condition is stable, the crew shall contact a medical command facility for direction as to whether it should transport to a more distant burn center.

b. If the burn is associated with other acute traumatic injury, the burn center destination must also be a trauma center.

c. If the patient is 14 years of age or younger, the burn center must be capable of treating pediatric burn patients.

d. If a burn patient has a suspected inhalation injury, the patient must be transported to the closest trauma center unless the patient’s airway has been protected by endotracheal intubation prior to transport.

7. Trauma center on “diversion” exception. An air ambulance may transport a patient to the next closest Level 1 or 2 trauma center if the closest center is on “divert” for trauma patients.

[In some situations, necessary resources may not be available at the closest trauma center (e.g. the center is on diversion for trauma patients because the center’s resources are committed to other trauma patients).]

a. The air ambulance service may not consider a trauma center to be on divert for trauma patients unless that center has notified the air ambulance service of the divert condition.

This notification from the trauma center may be through the air ambulance service’s communication center or by direct communication with the air ambulance. This notification may occur by any type of communication, including web-based diversion notification.

b. In the case of a mass casualty incident, the air ambulance crew shall follow the direction of the designated EMS Transport Officer, or his/her designee, related to transport to an alternate trauma center if the closest trauma center does not have the resources to accept the patient based upon communication that occurs between the trauma center(s) and the EMS Transport Officer or other designated official.

8. Medical command exception. Transport by air ambulance to a facility other than the closest trauma center, or transport by ground ambulance to a facility instead of air transport to the closest trauma center, is permitted if directed by a medical command physician because the medical command physician is presented with medical circumstances that lead the medical command physician to reasonably perceive that a departure from the prior provisions in this protocol is in the patient’s best interest. This may occur in the following situations:

a. The medical command physician determines, in conjunction with the closest trauma center, that anticipated specialty care is not available at the closest trauma center (e.g. hyperbaric oxygen, extracorporeal rewarming, burn care, specialty pediatric care, etc.)

b. The medical command physician determines that the patient has a condition that should be treated at the closest receiving facility or would be most appropriately treated by ground ambulance transport.

12. Patient choice exception. Transport by air ambulance to a facility other than the closest Level 1 or 2 trauma center or other facility that meets the criteria in sections 1-7 is permitted if the patient or other person with legal authority to act for the patient (hereafter “legal representative”) makes an unsolicited request for transport to a different facility. This is subject to the following:

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a. The air medical crew does not discuss possible destinations other than destinations that meet the criteria in sections 1-7 of this protocol, unless such discussion is initiated by the patient or the patient’s legal representative.

b. The air medical crew communicates the request to a medical command physician and, if the medical command physician has a reasonable cause to believe that the difference in estimated transport time could adversely affect the patient’s condition or recovery, the air medical crew or medical command physician provides that information to the patient or legal representative.

c. The medical command physician determines that the patient or the patient’s legal representative is alert and oriented and communicates an understanding of the potential adverse consequences to the patient if the request is followed.

d. The request is not unreasonable. Circumstances in which the request may be considered to be unreasonable include, but are not limited to, weather conditions as determined by the pilot that make the transport to the trauma center hazardous, and the travel time to the trauma center is excessive.

13 Medical command assistance. If the crew of an air ambulance has any question regarding the facility to which a patient is to be transported or whether the transport should be made by ground or air ambulance, the crew shall contact a medical command facility for assistance. Ideally, this medical command facility will be either the medical command facility at the institution affiliated with the air ambulance service or at the closest trauma center.

C. Contact with receiving trauma/burn center

1. Communicate with the receiving center as soon as possible to provide patient information and an estimated time of arrival. The air ambulance crew should do this, if feasible, since it is the best source of patient information. Provide this information to the receiving facility as soon as possible, since the information may affect the mobilization of various resources within the facility in preparation for the arrival of the patient. The mobilization of these resources may vary among centers. In carrying out this responsibility the following apply to the air ambulance crew:

   a. Give precedence to contact with the receiving center over contact with the air ambulance medical command when orders beyond standing treatment protocols are not needed or anticipated.

   b. Do not delay transporting the patient while waiting to establish communication with the receiving facility.

   c. Contact the receiving center by the method preferred by the center (within the air ambulance’s communication capabilities).

   d. Follow medical direction given by the receiving center’s medical command facility. Note: The air ambulance service may require that medical command orders received from a receiving facility’s medical command be verified or adjusted by the air ambulance service’s primary medical command but this should be a rare exception.

D. Resources to assist air medical services. When available, the most current Department records of the following resources shall be used to assist an air medical service when using this protocol, unless the air ambulance service has more recent information:

1. Centers Designated to Receive Patients with Trauma

   a. Trauma Centers including a designation of centers specially qualified to receive pediatric trauma patients.

   b. Burn Centers, including a designation of centers specially qualified to receive pediatric burn patients.

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NOTES:

4. “Trauma Center” refers to a Level 1 or 2 trauma center that is currently accredited in this Commonwealth and similarly qualified trauma centers in adjacent states (See section C.1.a.). This definition of trauma center applies throughout this protocol.

5. “Air transport distance” refers to the distance from the landing zone at the scene to the landing zone at the trauma center as measured in nautical miles.

6. This ten-mile exception, pediatric exception, burn patient exception, or patient choice exception is not applicable if:
   a. During air transport the patient does not have an adequate airway and cannot be adequately ventilated, has rapidly worsening vital signs, or has absence of vital signs. Under these circumstances, the patient shall be transported by the fastest possible means to the closest trauma center, or based upon crew judgment may be transported to the closest receiving facility.
   b. When the patient has not yet been loaded into an air ambulance, if the patient does not have an adequate airway and cannot be adequately ventilated or is exsanguinating externally with rapidly worsening vital signs. Under these circumstances, the air medical personnel shall strongly consider transport by ground ambulance if the estimated transport time to the closest receiving facility (whether or not this facility is a trauma center) by ground ambulance is shorter than the estimated transport time by air to that facility or any other receiving facility.

7. When this exception is applicable, the air ambulance crew may offer the patient or the patient’s legal representative discretion to choose transport to any facility permitted by the exception.

8. This exception shall not be used in conjunction with or cumulative to any other exception.

9. Serious burns are defined as burns that meet the American Burn Association or American College of Surgeons burn unit referral criteria.

10. The ambulance crew need only have a good faith belief that the person has legal authority to make the decision for the patient, provided the crew is without knowledge of facts negating that authority.

Performance Parameters:

B. Review of documentation for adherence to protocol for all acute trauma patients in the prehospital setting who are not transported to the closest trauma center.

Authority:

C. This protocol applies to all persons regulated under the EMS Act when they are involved with the transport of a trauma patient by an air ambulance or involved in the process of determining whether an air ambulance should be used to transport a trauma patient.

D. This protocol is issued pursuant to section 5(c) of the Emergency Medical Services Act, 35 P.S. §6925(c), which gives the Department of Health authority to establish protocols for the transport and transfer of acutely ill and injured patients to the most appropriate facility.
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