



Pennsylvania Statewide

Basic Life Support Protocols

**Pennsylvania Department of Health
Bureau of Emergency Medical Services**

2023

(717) 787-8740

October 5, 2023

Dear EMS Provider:

The Bureau of EMS, Department of Health, is pleased to provide these updated “Statewide BLS Protocols” to the EMS providers of Pennsylvania.

This 2023 update contains many important changes. Some major changes include:

- Reference ranges for carbon monoxide measuring devices.
- Optional protocol to allow EMT agencies to “Check and Inject” epinephrine in place of expensive autoinjector devices with appropriate training.
- Prefilled intranasal powder or intramuscular autoinjector for the treatment of hypoglycemia.
- Updated language addressing the definition of a patient. This language brings the definition of a “patient” into line with accepted definitions across other health professions and defines providers’ obligations to treat them in accordance with the statewide protocols.

Pennsylvania has used Statewide BLS Protocols since September 1, 2004, and this edition is an update to the version that was effective since November 1, 2021. To assist EMS providers when reviewing the changes, new sections of the protocols that correspond to this 2023 version are identified with yellow highlighting and sections that have been removed are struck through and highlighted. EMS providers may use this 2023 version of the statewide BLS protocols as soon as they completed the required training, but all providers must be using these updated protocols by the effective date of January 1, 2024.

EMS providers are permitted to perform patient care, within their Pennsylvania. defined scope of practice, when following the appropriate protocol(s) or when following the order of a medical command physician. Each EMS provider is responsible for being knowledgeable regarding current state-approved protocols so that he/she may provide the safest, highest quality and most effective care to patients. All providers have an equal and shared responsibility to care for and treat all patients.

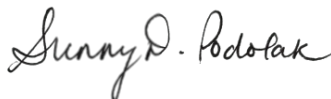
To assist providers in becoming familiar with the changes to the protocols, a continuing education presentation is available to regions and agencies. This update is available for in-person presentations, or the course can be completed on TRAIN PA, the on-line Learning Management System (LMS).

The 2023 BLS Protocol Update (BEMS course # 1000058611) will be considered a core requirement for all levels of EMS providers that register their certification during the current time period.

When providing patient care under the EMS Act, EMS providers of all levels must follow applicable protocols. Although the Statewide BLS Protocols are written for BLS-level care, they also apply to the BLS-level care that is performed by all providers at or above the level of AEMT. Since written protocols cannot feasibly address all patient care situations that may develop, the Department expects EMS providers to use their training and judgment regarding any protocol-driven care that would be harmful to a patient. **When the provider believes that following a protocol is not in the best interest of the patient, the EMS provider should contact a medical command physician if possible.** Cases where deviation from the protocol is justified are rare. The reason for any deviation should be documented. All deviations are subject to investigation to determine whether or not they were appropriate. In all cases, EMS providers are expected to deliver care within the scope of practice for their level of certification.

The Department of Health's Bureau of EMS website will always contain the most current version of the EMS protocols, the scope of practice for each level of provider, important EMS Information Bulletins, and many other helpful resources. This information can be accessed online at www.health.pa.gov. The Statewide BLS Protocols may be directly printed or downloaded into a mobile device for easy reference.

The Department is committed to providing Pennsylvania's EMS providers with the most up-to-date protocols, and to do this requires periodic updates. The protocols will be reviewed regularly, and EMS providers are encouraged to provide recommendations for improvement at any time. Comments should be directed to the Commonwealth EMS Medical Director, Pennsylvania Department of Health, Bureau of EMS, 1310 Elmerton Avenue, Harrisburg, PA 17110.



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TABLE OF CONTENTS

SECTION 100:		Operations
<hr/>		
100 – General Protocol Principles.....	100-1 thru 100-4	
102 – Scene Safety	(GUIDELINES) 102-1 thru 102-2	
103 – Infection Control / Body Substance Isolation	(GUIDELINES) 103-1 thru 103-2	
111 – Non-Treatment and/or Non-Transport of Patient Refusal of Treatment/Transport.....	111-1 thru 111-5	
112 – Non-Transport of Patient or Cancellation of Response	112-1 thru 112-2	
123 – EMS Vehicle Operations/Safety.....	123-1 thru 123-3	
124 – Safe Transportation of Children in Ground Ambulances.....	(GUIDELINES) 124-1 thru 124-3	
150 – Rehabilitation at Fire/ Incident Scene	(GUIDELINES) 150-1 thru 150-4	
170 – Patient Destination – Ground Transport.....	170-1 thru 170-4	
180 – Trauma Patient Destination.....	180-1 thru 180-4	
181 – Air Medical Transport for Non-Trauma Patients	181-1 thru 181-2	
190 – Trauma Patient Destination [AIR AMBULANCE PROTOCOL].....	190-1 thru 190-4	
192 – Air Ambulance Safety Considerations.....	192-1 thru 192-2	
SECTION 200:		Assessments & Procedures
<hr/>		
201 – Initial Patient Contact	201-1	
202 – Oxygen Administration	202-1 thru 202-2	
204 – Abuse & Neglect (Child and Elder)	204-1 thru 204-2	
206 – Human Trafficking.....	(GUIDELINES) 206-1 thru 206-2	
210 – Indications for ALS Use.....	210-1 thru 210-2	
222 – Ventilation via Endotracheal Tube or Alternative/Rescue Airway (ASSIST ALS).....	222-1 thru 222-2	
226 – Pulse Oximetry	226-1 thru 226-2	
227 – Carbon Monoxide Co-oximetry.....	[Optional] 227-1 thru 227-2	
228 – Glucose Measurement (Glucometer).....	[Optional] 228-1	
250 – 12-Lead Electrocardiography.....	[Optional] 250-1	
251 – ECG Monitor Preparation.....	(ASSISTING ALS) 251-1 thru 251-2	
261 – Spine Care	261-1 thru 261-3	
SECTION 300:		Resuscitation
<hr/>		
322 – Dead on Arrival (DOA)	322-1	
324 – Out-of-Hospital Do Not Resuscitate	324-1	
331A – General Cardiac Arrest – Adult.....	331A-1 thru 331A-4	
331P – General Cardiac Arrest – Pediatric.....	331P-1 thru 331P-3	
332 – Cardiac Arrest – Traumatic	332-1	
333 – Newborn Resuscitation	333-1 thru 333-2	
SECTION 400:		Respiratory
<hr/>		
411 – Allergic Reaction / Anaphylaxis.....	411-1 thru 411-2	
421 – Respiratory Distress / Respiratory Failure	421-1 thru 421-3	
SECTION 500:		Cardiac
<hr/>		
501 – Chest Pain/Suspected Acute Coronary Syndrome	501-1 thru 501-2	
590 – Ventricular Assist Device (VAD) Management.....	590-1 thru 590-2	
SECTION 600:		Trauma & Environmental
<hr/>		
601 – Bleeding Control.....	601-1 thru 601-2	
602 – Multisystem Trauma or Traumatic Shock	602-1 thru 602-2	
605 – Blast / Explosive Injury	605-1 thru 605-2	
611 – Head Injury / Traumatic Brain Injury.....	611-1 thru 611-2	
621 – Tooth Avulsion.....	621-1	
632 – Impaled Object	632-1	
662 – Amputation	662-1	
671 – Burn.....	671-1 thru 671-2	
681 – Hypothermia / Cold Injury / Frostbite.....	681-1 thru 681-2	
686 – Heat Emergency.....	686-1	
691 – Near Drowning and Diving Injury	691-1	

SECTION 700:

Medical & Ob/Gyn

702 – Altered Level of Consciousness/ Diabetic Emergency.....702-1 thru 702-2
 706 – Suspected Stroke 706-1 thru 706-4
 781 – Emergency Childbirth 781-1 thru 781-3

SECTION 800:

Behavioral & Poisoning

801 – Agitated Behavior/Psychiatric Disorders 801-1 thru 801-3
 831 – Poisoning / Toxin Exposure (Ingestion / Inhalation / Absorption / Injection)..... 831-1 thru 831-3

SECTION 900:

Special Considerations

901 – Medical Command Contact 901-1 thru 901-3
 904 – On-Scene Physician / RN 904-1 thru 904-2
 910 – Transportation of Service Animals(GUIDELINES).....910-1
 915 – Civil Disturbance Considerations.....(GUIDELINES)..... 915-1 thru 915-3
 919 – Crime Scene Preservation(GUIDELINES).....919-1
 921 – Indwelling Intravenous Catheters / Other Medical Devices 921-1 thru 921-2

APPENDICES

Appendix A - Apgar Scoring ChartA-2
 Appendix B- Burn Chart - Rule of NinesA-3
 Appendix C- Glasgow Adult Coma Scale.....A-4
 Appendix D - Rehabilitation Patient TagA-5
 Appendix E - Heat Stress IndexA-6
 Appendix F- Wind Chill Chart.....A-7
 Appendix G - Pediatric Vital SignsA-8
 Appendix H - Remaining Oxygen Supply Table.....A-9
 Appendix I - Pennsylvania EMS Handoff ReportA-10
 Appendix J - Pediatric Weight Conversion Chart.....A-11

Index..... I-1 thru I-2

GENERAL PROTOCOL PRINCIPLES

STATEWIDE PROTOCOLS

Criteria:

- A. These general principles apply to the use of all protocols used by ALL EMS providers

Purpose:

- A. The Statewide Protocols are written with the goal of providing the highest quality of EMS patient care to patients treated by EMS providers in the Commonwealth.
- B. The Statewide Protocols provide a statewide uniformity and consistency to expected EMS care provided by EMS providers.
- C. The Statewide Protocols are written based upon the most current and best scientific evidence related to prehospital/ out-of-hospital EMS care, when this evidence is available.
- D. The Statewide Protocols are written to provide a balance between expected patient care and some educational information related to possible variations, newer information, and important warnings/contraindications.

Policy:

A. Scope of Practice

1. An EMS provider who is appropriately credentialed by the EMS agency and EMS agency medical director may perform skills as defined by the EMS provider's scope of practice, when following the order of a medical command physician or when using Department approved medical treatment protocols under the authorization of the EMS agency medical director. The Scope of Practice is published in the PA Bulletin and listed on the EMS Bureau website
2. Unless a statewide ALS/IALS/specialty care protocol or Department-approved regional protocol supersedes the statewide BLS protocol, the Statewide BLS Protocols apply to patient care provided by all providers.
3. The Statewide BLS, ALS, and CCT Protocols apply to patient care provided by air ambulances unless superseded by a department-approved air ambulance protocol.
4. Regions may establish Department-approved regional protocols. All EMS providers are expected to follow applicable Department-approved regional protocols from the region in which their EMS agency is based.

B. Deviation from Protocols:

1. When providing patient care under the EMS Act, EMS providers must follow the orders of a medical command physician or, in the absence of such orders, the applicable Statewide protocols or Department-approved Regional Medical Treatment Protocols. Since written protocols cannot feasibly address all patient care situations that may develop, the Department expects EMS providers to use their training and judgment regarding any protocol-driven care that in their judgment would be harmful to a patient under the circumstances. When the provider believes that following a protocol is not in the best interest of the patient, the EMS provider must contact a medical command physician if possible. Cases where deviation from a protocol is justified are rare. The reason for any deviation should be documented. All deviations are subject to investigation to determine whether or not they were appropriate. In all cases, EMS providers are expected to deliver care within the scope of practice for their level of certification.

2. Medical command physicians are permitted to provide orders for patient care that are not consistent with the protocols when, under the circumstances, the procedures identified in a protocol are not the most appropriate care in the judgment of the physician or when there is not a specific protocol that is appropriate to the patient's condition. Some protocols have a section of "Possible Medical Command Orders". These are provided as a possible resource for the medical command physician and as an educational resource for the EMS providers. These "Possible Medical Command Orders" do not substitute for the judgment of the medical command physician, and the medical command physician is under no obligation to follow the treatment options listed in this section.
3. In cases where a specific step, treatment, or medication dose within a protocol is contraindicated, EMS providers are expected to use their judgment and training to identify these contraindications, and in these situations, the provider is not expected to provide that specific treatment. Failure to provide a treatment that is contraindicated is not considered a deviation from protocol, but the EMS provider must document the contraindication. Medical command must be contacted if the patient's condition requires or may benefit from alternative treatments that are not listed within the protocol.
4. Under no circumstance may an EMS agency medical director institute a protocol that is separate from Department-approved Statewide or Regional protocols. Under no circumstance may an EMS agency or its medical director institute a policy that contradicts or is not consistent with the Statewide Protocols or the Department-approved Regional Treatment Protocols.

C. Guidelines and Protocol Options:

1. Some documents are labeled as guidelines rather than protocols. Guidelines serve as "best practice" suggestions, and these may be used by agencies and regions. The suggested guidelines are not considered expected care, although a region may choose to request Department approval to use a guideline as a regional protocol.
2. Some protocols or treatments within a protocol may be listed as "optional" or "if available". Regions or agencies may choose to use an optional protocol or treatment/medication. Regions, with Department approval, may set requirements for options, treatments, or medications that apply to all agencies within the region. EMS agency medical directors may set requirements for options, treatments, or medications that apply to all providers, within their Scope of Practice, with the agency. When statewide protocols permit options, regional requirements will supersede agency level requirements regarding the options that are permitted.
3. When protocols provide for options, regions may standardize the use of these options across the region, and agency's may choose options only if the choice does not conflict with regional policies.

D. Format and Use of Protocols

1. Criteria/Exclusion Criteria - these sections list the patient conditions that are applicable to the specific protocol and list exclusion criteria that are examples of patient conditions that are not applicable to the specific protocol.
2. System Requirements - this section defines specific agency or provider requirements that must be met in addition to the usual expectations of every EMS agency or provider when providing treatments within the specific protocol. Most protocols are applicable to all providers, and therefore specific "system requirements" are rare.
3. Possible Medical Command Orders - this section is added for educational purposes. It provides EMS providers with an understanding of options that may be available through medical command order, and it may be useful to medical command physicians when providing medical command orders.
4. Using the algorithm flow charts:
 - a. Although algorithms follow a step-wise approach to patient care, there are frequently several treatments that should vary in order or may be done simultaneously. Treatments that are

listed within solid boxes may be done in any order, based upon the patient presentation, or may be done simultaneously when additional EMS providers are present.

- b. When several medication/treatment options are available, the algorithm step may refer the EMS provider to a “box” (outlined with a broken line) that is outside of the algorithm flow. The

provider should refer to the box to choose the appropriate treatment and then return to the algorithm step and continue to follow the algorithm flow sheet. Regions or EMS agency medical directors may define specific expectations for expected treatment options to be chosen from these boxes.

- c. In general, the algorithms and protocols do not specify when to initiate packaging or transportation of most patients. Patient condition, including primary assessment, and judgment of the EMS provider should be utilized to determine the need for on-scene treatment, and when to initiate packaging and transport. If transport issues are not directly identified in the protocols, quality improvement benchmarks set by regions or agency medical oversight should guide transport expectations.

- d. EMS providers are not required to follow every step within a protocol if a step is deemed to be inappropriate for a particular patient. For example, if a patient’s condition has improved and the treatment would be unnecessary or if a medication is contraindicated.

- e. In most cases, the algorithm does not specify when or how to reassess patients. It is expected that patients are reassessed frequently, and results documented, particularly after each medical intervention or medication administration. Vital signs or other appropriate reassessments should be done and documented after administering any medication that could change hemodynamic parameters, level of consciousness, and in accordance with Protocol 201.

- f. Most protocols list a “Contact Medical Command” point. Although medical command should be contacted earlier if the EMS provider believes that consultation with a medical command physician would be helpful in treating the patient, providers must use the Medical Command Contact Protocol (#901 and/or 9001), which defines actions that must be taken, when the “Contact Medical Command” point is reached.

- 5. Notes - these footnotes refer to the identified step of the algorithm. The notes provide additional information regarding the general step. Notes are generally used to draw attention to uncommon circumstances or to provide additional educational information. Providers are expected to follow information within the notes as if they were a step in the algorithm flow chart.

- 6. Performance Parameters - this section provides suggested benchmarks for quality improvement reviews that may occur at the agency, regional or statewide level. In some instances, following quality improvement review using, at a minimum, the listed performance parameters is required.

E. Use of medical command

- 1. Medical command may be contacted at any step in patient care, and EMS providers should contact medical command if a patient’s condition is unusual and is not covered by a specific protocol, if a patient’s presentation is atypical and the protocol treatment may not be the best treatment for the patient, or in any situation where the EMS provider is not sure about the best treatment for the patient.
- 2. Agency medical directors may place limitations on an EMS provider that require contact with medical command earlier than defined by the Statewide Protocols. These limitations may be placed upon an individual provider when there is reason to restrict the skills that the provider is credentialed to perform, or the limitations may apply to all agency providers for uncommon skills/procedures that may require online direction.
- 3. The “Medical Command Contact” Protocol # 901 and or 9001 defines when medical command must be contacted and when it is appropriate to proceed beyond the “Contact Medical Command” step if communication with a medical command facility cannot be established.

H. Pediatric issues

1. Unless otherwise stated, pediatric protocols will apply to patients ≤ 14 years of age. If the patient's age is not known, then pediatric protocols will apply until there are physical signs that the patient has reached adolescence.
2. All iALS agencies and above must carry a commercial length-based device to estimate patient weight and appropriate drug dosages. These devices should be used as the primary method for determining the weight/appropriate drug doses for children. Additionally, the following formula or table may be used:
 - a. Formula: $(\text{Age in years} \times 3) + 7 = \text{estimated weight in kgs.}$
 - b. Table
 - 1) 1 y/o = 10 kg
 - 2) 3 y/o = 15 kg
 - 3) 5 y/o = 20 kg
 - 4) 7 y/o = 25 kg
 - 5) 9 y/o = 30 kg

I. Equipment Information

1. All medical devices must be used, maintained, and calibrated in accordance with the recommendations from the manufacturer.
2. Electronic glucose testing meters must be carried by all ALS agencies. BLS agencies, following authorization of the agency medical director, may choose to carry glucose testing meters. Agencies must have either a CLIA license or certificate of waiver. An agency performing glucose testing with a meter cleared for home use by the FDA must hold a CLIA certificate of waiver. A CLIA certificate of waiver (CoW) is good for two years. Each agency is responsible for determining whether a CLIA license or waiver is required.

SCENE SAFETY GUIDELINES

Criteria:

- A. This guideline applies to every EMS response, particularly if dispatch information or initial scene size-up suggests:
1. Violent patient or bystanders
 2. Weapons involved
 3. Industrial accident or MVA with potential hazardous materials
 4. Patient(s) contaminated with chemicals

System requirements:

- A. These guidelines provide general information related to scene safety. These guidelines are not designed to supersede an EMS agency's policy regarding management of providers' safety [as required by EMSS Act regulation(s)], but this general information may augment the agency's policy.
- B. These guidelines do not comprehensively cover all possible situations, and EMS provider judgment should be used when the EMS agency's policy does not provide specific direction.

Procedure:

A. If violence or weapons are anticipated:

1. EMS providers should wait for law enforcement officers to secure scene before entry.
2. Avoid entering the scene alone.¹

B. If violence is encountered or threatened, retreat to a safe place if possible and await law enforcement. **MVC's, Industrial Accidents, Hazardous Materials situations:**

1. General considerations:
 - a. Obtain as much information as possible prior to arrival on the scene.
 - b. Look for hazardous materials, placards, labels, spills, and/or containers (spilling or leaking). Consider entering scene from uphill/upwind.
 - c. Look for downed electrical wires.
 - d. Call for assistance, as needed.
2. Upon approach of scene, look for place to park vehicle:
 - a. Uphill and uphill of possible fuel spills and hazardous materials.
 - b. Park in a manner that allows for rapid departure.
 - c. Allows for access for fire/rescue and other support vehicles.
3. Safety:
 - a. Consider placement of flares/warning devices.²
 - b. Avoid entering a damaged/disabled vehicle until it is stabilized.
 - c. Do not place your EMS vehicle so that its lights blind oncoming traffic.
 - d. Use all available lights to light up scene on all sides of your vehicle.
 - e. PPE is suggested for all responders entering vehicle or in area immediately around involved vehicle(s).
 - f. All EMS providers should wear ANSI compliant high-visibility reflective outerwear at scenes along roadways when required by federal regulation 23 CFR 634. EMS agencies should consider a policy requiring all EMS providers to wear high-visibility outerwear at all times when on an EMS call and outside of a vehicle.

C. Parked Vehicles (non-crash scenes):

1. Position EMS vehicle:
 - a. Behind vehicle, if possible, in a manner that allows rapid departure and maximum safety of EMS providers.
 - b. Turn headlights on high beam and utilize spotlights aimed at rear view mirror.
 - c. Inform the dispatch center, by radio, of the vehicle type, state and number of license plate and number of occupants **prior** to approaching the suspect vehicle.
2. One person approaches vehicle:
 - a. If at night, use a flashlight in the hand that is away from the vehicle and your body.
 - b. Proceed slowly toward the driver's seat; keep your body as close as possible to the vehicle (less of a target). Stay behind the "B" post and use it as cover.³
 - c. Ensure trunk of vehicle is secured; push down on it as you walk by.
 - d. Check for potential weapons and persons in back seat.
 - 1) Never stand directly to the side or in front of the persons in the front seat.

- e. Never stand directly in front of a vehicle.
3. Patients:
 - a. Attempt to arouse victim by tapping on roof/window.
 - b. Identify yourself as an EMS provider.
 - c. Ask what the problem is.
 - d. Don't let patient reach for anything.
 - e. Ask occupants to remain in the vehicle until you tell them to get out.
- D. Residence scenes with suspected violent individuals:**
 1. Approach of scene:
 - a. Attempt to ascertain, via radio communications, whether authorized personnel have declared the scene under control prior to arrival.
 - b. Do not enter environments that have not been determined to be secure or that have been determined unsafe.
 - 1) Consider waiting for police if dispatched for an assault, stabbing, shooting, etc.
 - c. Shut down warning lights and sirens one block or more before reaching destination.
 - d. Park in a manner that allows rapid departure.
 - e. Park 100' prior to or past the residence.
 2. Arrival on scene:
 - a. Approach residence on an angle.
 - b. Listen for sounds, screaming, yelling, gun shots.
 - c. Glance through window, if available. Avoid standing directly in front of a window or door.
 - d. Carry portable radio but keep volume low.
 - e. If you decide to leave, walk backward to vehicle.
 3. Position at door:
 - a. Stand on the knob side of door; do not stand in front of door.
 - b. Knock and announce yourself.
 - c. When someone answers door – have him or her lead the way to the patient.
 - d. Open door all the way and look through the doorjamb.
 4. Entering the residence:
 - a. Scan room for potential weapons.
 - b. Be wary of kitchens (knives, glass, caustic cleaners, etc.).
 - c. Observe for alternative exits.
 - d. Do not let anyone get between you and the door, or back you into a corner.
 - e. Do not let yourself get locked in.
 5. Deteriorating situations:
 - a. Leave (with or without patient).
 - b. Walk backwards from the scene and do not turn your back.
 - c. Meet police at an intersection or nearby landmark, not a residence.
 - d. Do not take sides or accuse anyone of anything.
- E. Lethal weapons:**
 1. Do not move firearms (loaded or unloaded) unless it poses a potential immediate threat.
 2. Secure any weapon that can be used against you or the crew out of the reach of the patient and bystanders
 - a. Guns should be handed over to a law enforcement officer if possible or placed in a locked space, when available.
 - 1) If necessary for scene security, safely move firearm keeping finger off of the trigger and hammer and keeping barrel pointed in a safe direction away from self and others.
 - 2) Do not unload a gun.
 - b. Knives should be placed in a locked place, when available.

Notes:

1. Each responder should carry a portable radio, if available.
2. Flares should not be used in the vicinity of flammable materials.
3. Avoid side and rear doors when approaching a van. Vans should be approached from the front right corner.

INFECTION CONTROL / BODY SUBSTANCE ISOLATION GUIDELINES

Criteria:

- A.** These guidelines should be used whenever contact with patient body substances is anticipated and/or when cleaning areas or equipment contaminated with blood or other body fluids.
- B.** Your patients may have communicable diseases without you knowing it; therefore, these guidelines should be followed for care of all patients.

System Requirements:

- A.** These guidelines provide general information related to body substance isolation and the use of universal precautions. These guidelines are not designed to supersede an EMS agency's infection control policy [as required by EMSS Act regulation 28 § 1027.3(p)], but this general information may augment the agency's policy.
- B.** These guidelines do not comprehensively cover all possible situations, and EMS provider judgment should be used when the EMS agency's infection control policy does not provide specific direction.

Procedure:

A. All patients:

1. Wear gloves on all calls where contact with blood or body fluid (including wound drainage, urine, vomit, feces, diarrhea, saliva, nasal discharge) is anticipated or when handling items or equipment that may be contaminated with blood or other body fluids.
2. Wash your hands often and after every call. Wash hands even after using gloves:
 - a. Use hot water with soap and wash for 20 seconds before rinsing and drying.
 - b. If water is not available, use alcohol or a hand-cleaning germicide.
3. Keep all open cuts and abrasions covered with adhesive bandages that repel liquids. (e.g. cover with commercial occlusive dressings or medical gloves)
4. Use goggles or glasses when spraying or splashing of body fluids is possible. (e.g. spitting or arterial bleed). As soon as possible, the EMS provider should wash face, neck and any other body surfaces exposed or potentially exposed to splashed body fluids.
5. Use pocket masks with filters/ one-way valves or bag-valve-masks when ventilating a patient.
6. If an EMS provider has an exposure to blood or body fluids¹, the provider must follow the agency's infection control policy and the incident must be immediately reported to the agency infection control officer as required. EMS providers who have had an exposure² should be evaluated as soon as possible, since antiviral prophylactic treatment that decreases the chance of HIV infection must be initiated within hours to be most effective. In most cases, it is best to be evaluated at a medical facility, preferably the facility that treated the patient (donor of the blood or body fluids), as soon as possible after the exposure.
7. Preventing exposure to respiratory diseases:
 - a. Respiratory precautions should be used when caring for any patient with a known or suspected infectious disease that is transmitted by respiratory droplets. (e.g. tuberculosis, influenza, or coronavirus like SARS/COVID-19). MEGG – mask, eye protection, gown, and gloves should be worn for droplet protection.
 - b. HEPA mask (fit-tested N-95 or better) should be worn when recommended and for suspected infectious disease that is transmitted by small aerosol particles (e.g. measles, smallpox, and COVID-19). Additionally, eye protection, gowns, and gloves should be worn for these conditions.

- c. In patients with suspected respiratory infectious disease, when performing aerosol-generating procedures (nebulizer treatments, CPAP, or ventilation with BVM or advanced airway, a viral HEPA filter should be placed between the device and the environment. Minimize close exposure to these aerosols by performing these treatments outdoors when possible.
 - d. A mask should be placed upon the patient if his/her respiratory condition permits.
 - e. When transporting with a suspected respiratory infectious disease, the ventilation fan in the rear compartment should be run constantly in the HIGH setting, and the rear compartment should be separated and sealed (plastic and tape) from the front compartment.²
 - f. Notify receiving facility of patient's condition so appropriate isolation room can be prepared.
8. Thoroughly clean and disinfect equipment after each use following agency guidelines that are consistent with Center for Disease Control recommendations.
 9. Place all disposable equipment and contaminated trash in a clearly marked plastic red Biohazard bag and dispose of appropriately.
 - a. Contaminated uniforms and clothing should be removed, placed in an appropriately marked red Biohazard bag and laundered / decontaminated.
 - b. All needles and sharps must be disposed of in a sharps receptacle unit and disposed of appropriately.

Notes:

1. At-risk exposure is defined as “a percutaneous injury (e.g. needle stick or cut with a sharp object) or contact of mucous membrane or non-intact skin (e.g. exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, tissue or other body fluids that are potentially infectious.” Other “potentially” infectious materials (risk of transmission is unknown) are CSF (cerebral spinal fluid), synovial, pleural, peritoneal, pericardial and amniotic fluid, semen and vaginal secretions. Feces, nasal secretions, saliva, sputum, sweat, tears, urine and vomitus are not considered potentially infectious unless they contain blood.
2. When working properly, the vent fan in an ambulance patient compartment can exchange the air in the compartment at rates as high as 30 times/ hour. This exceeds the exchange rates in a hospital negative pressure isolation room.

**NON-TREATMENT and/or NON-TRANSPORT OF PATIENT
REFUSAL OF TREATMENT/TRANSPORT
STATEWIDE BLS PROTOCOL**

Criteria:

- A. Patient with illness or injury refuses treatment or transport.
- B. Individual with legal authority to make decisions for an ill or injured patient refuses treatment or transport.
- C. Any time a patient is not treated and/or transported.
- D. Any patient for which a patient-provider relationship has been established.

Exclusion Criteria:

- A. Individual patient involved in incident but not injured or ill, See Protocol #112.
- B. Personnel involved in rehabilitation at fire/incident scene. See Protocol #150.

System Requirements:

- A. An EMS agency or region may require its providers to complete an EMS Non-Treatment/Non-Transport Patient Refusal Checklist as part of the PCR for every patient that is not treated or transported refuses transport. Regional medical treatment protocol may require contact with medical command physician for all patients not treated and/or transported refusing treatment and/or transport.

Procedure**A. All Patients:**

1. Assess patient using Initial Contact and Patient Care Protocol #201.
 - a. If the patient is combative or otherwise poses a potential threat to EMS providers, retreat from the immediate area and contact law enforcement.
 - b. Consider ALS if a medical condition may be altering the patient's ability to make medical decisions.
2. Attempt to secure consent to treatment / transport. ^{1,2,3,4}
3. Assess the following (use EMS Non-Treatment and/or Non-Transport Patient Refusal Checklist if required by region or agency):
 - a. Assess patient's ability to make medical decisions and understand consequences (e.g. alert and oriented x 4, GCS=15, no evidence of suicidal ideation/attempt, no evidence of intoxication with drugs or alcohol, ability to communicate an understanding of the consequences of not being treated or transported refusal).
 - b. Assess patient's understanding of risks to refusing treatment/transport.
 - c. Assess patient for evidence of medical conditions that may affect ability to make decisions (e.g. hypoglycemia, hypoxia, hypotension)
4. If acute illness or injury has altered the patient's ability to make medical decisions and if the patient does not pose a physical threat to the EMS providers, the providers shall may treat the patient as per appropriate treatment protocol. Otherwise contact medical command. See Behavioral Disorders/Agitated Patient (Restraint) protocol #801 as appropriate.
5. Contact medical command, when available communication technology permits, if using the EMS Non-Treatment/Non-Transport Refusal Checklist and any response is completed within a shaded box or if patient assessment reveals at least one of the following:
 - a. EMS provider is concerned that the patient may have a serious illness or injury.

- b. Patient has suicidal ideation **or attempt**, chest pain, shortness of breath, hypoxia, syncope, or evidence of altered mental status from head injury intoxication or other condition.
 - c. Patient does not appear to have the ability to make medical decisions or understand the consequences of those decisions.
 - d. The patient is less than 18 years of age.
 - e. Vital signs are abnormal at any time during patient assessment or care.
6. If patient is capable of making and understanding the consequences of medical decisions and there is no indication to contact medical command or medical command has authorized the patient to refuse treatment/transport, then:
- a. Explain possible consequences of refusing treatment/transport to the patient ³
 - b. Have patient and witness sign the EMS **Non-Treatment/Non-Transport Refusal** Checklist or other form ⁴.
 - c. Consider the following:
 - 1) Educate patient/family to call back if patient worsens or changes mind
 - 2) Have patient/family contact the patient's physician
 - 3) Offer assistance in arranging alternative transportation.
- B. Document:** The assessment of the patient and details of discussions must be thoroughly documented on the patient care report (PCR), EMS agencies may choose to require that providers complete the EMS Patient **Non-Treatment/Non-Transport Refusal** Checklist that is included in this protocol as part of the PCR for every patient that **is not treated or transported refuses treatment**. In the absence of a completed EMS **Non-Treatment/Non-Transport Refusal** Checklist, documentation in the PCR should **at a minimum generally** include:
1. History of event, injury, or illness.
 2. Appropriate patient assessment.
 3. Assessment of patient's ability to make medical decisions and ability to understand the consequences of decisions.
 4. Symptoms and signs indicating the need for treatment/transport.
 5. Information provided to the patient and/or family in attempts to convince the patient to consent to treatment or transport. This may include information concerning the consequences of **not being treated or transported refusal**, alternatives for care that were offered to the patient, and time spent on scene attempting to convince the individual.
 6. Names of family members or friends involved in discussions, when applicable.
 7. Indication that the patient and/or family understands the potential consequences of refusing treatment or transport.
 8. **If Medical Command contacted, include physicians name** and instructions, **when applicable**.
 9. Signatures of patient **or legal guardian and/or** witnesses when possible.

Possible MC Orders:

- A. Medical command physician may request to speak with the patient, family, or friends when possible.
- B. Medical command physician may order EMS providers to contact law enforcement or mental health agency to facilitate treatment and/or transport against the patient's will if the patient lacks capacity. In this case, the safety of the EMS providers is paramount, and no attempt should be made to carry out an order to treat or transport if it endangers the EMS providers. Contact law enforcement as needed.

Notes:

1. If the patient lacks the capacity to make medical decisions, the EMS provider shall comply with the decision of another person who has the capacity to make medical decisions, is reasonably available, and who the EMS provider, in good faith, believes to have legal authority to make the decision to consent to or refuse treatment or transport of the patient.
 - a. The EMS provider may contact this person by phone.
 - b. This person will often, but not always, be a parent or legal guardian of the patient. The EMS provider should ensure that the person understands why the person is being approached and that person's options and is willing to make the requested treatment or transport decisions for the patient.
2. If the patient is 18 years of age or older, has graduated from high school, has married, has been pregnant, or is an emancipated minor, the patient may make the decision to consent to or refuse treatment or transport. A minor is emancipated for the purpose of consenting to medical care if the minor's parents expressly, or implicitly by virtue of their conduct, surrender their right to exercise parental duties as to the care of the minor. If a minor has been married or has borne a child, the minor may make the decision to consent to or refuse treatment or transport of his or her child. If the minor professes to satisfy any of the aforementioned criteria, but does not satisfy the criterion, the EMS provider may nevertheless comply with the decision if the EMS provider, in good faith, believes the minor.
3. If a patient who has the capacity to make medical decisions refuses to accept recommended treatment or transport, the EMS provider should consider talking with a family member or friend of the patient. With the patient's permission, the EMS provider should attempt to incorporate this person's input into the patient's reconsideration of his or her decision. These persons may be able to convince the patient to accept the recommended care.
4. For minor patients who appear to lack the capacity or legal authority to make medical decisions:
 - a. If the minor's parent, guardian, or other person who appears to be authorized to make medical decisions for the patient is contacted by phone, the EMS provider should have a witness confirm the decision. If the decision is to refuse the recommended treatment or transport, the EMS provider should request the witness to sign the **Non-Treatment/Non-Transport Refusal** checklist.
 - b. If a person who appears to have the authority to make medical decisions for the minor cannot be located, and the EMS provider believes that an attempt to secure consent would result in delay of treatment which would increase the risk to the minor's life or health, the EMS provider shall contact a medical command physician for direction. The physician may direct medical treatment and transport of a minor if an attempt to secure the consent of an authorized person would result in delay of treatment which the physician reasonably believes would increase the risk to the minor's life or health.
 - c. If a person who appears to have authority to make medical decisions for the minor cannot be located, the EMS provider believes an attempt to secure consent would result in delay of treatment which would increase the risk to the minor's life or health, and the EMS provider is unable to contact a medical command physician for direction, the EMS provider may provide medical treatment to the and transport a minor patient without securing consent. An EMS provider may provide medical treatment to and transport any person who is unable to give consent for any reason, including minors, where there is no other person reasonably available who is legally authorized to refuse or give consent to the medical treatment or transport, providing the EMS provider has acted in good faith and without knowledge of facts negating consent.

5. The medical command physician may wish to speak directly to the patient if possible. Speaking with the medical command physician may cause the patient to change his or her mind and consent to treatment or transport.

Performance Parameters:

- A. Compliance with completion of the EMS **Non-Treatment/Non-Transport Patient Refusal** checklist for every patient that **is not treated and/or transported** ~~refuses transport~~, if required by agency or regional policy.
- B. Compliance with medical command physician contact when indicated by criteria listed in protocol.

EMS Patient Non-Treatment and/or Non-Transport Refusal Checklist

EMS Agency: _____ Date: _____ Time: _____
 Patient Name: _____ Age: _____ Phone #: _____
 Incident Location: _____ Incident # _____
 Situation of Injury/Illness: _____

Check marks in shaded areas require consult with Medical Command before patient release

Patient Assessment:

Suspected serious injury or illness based upon patient -
 History, mechanism of injury, or physical examination: Yes No

18 years of age or older: Yes No Any evidence of: Suicide attempt/ideation? Yes No
 Without ability to speak with guardian Head Injury? Yes No
 Patient Oriented to: Intoxication? Yes No
 Person Yes No Chest Pain? Yes No
 Place Yes No Dyspnea? Yes No
 Time Yes No Syncope? Yes No
 Event Yes No If head trauma & taking aspirin/anticoagulant? Yes No
 12-lead done? Yes No

Vital Signs:	Consult Medical Command if:	If altered mental status or diabetic (optional for BLS)
Pulse _____	<50bpm or >100 bpm	Chemstrip/Glucometer: _____mg/dl <input checked="" type="checkbox"/> < 60 mg/dl
Sys BP _____	<100 mm Hg or > 200 mm Hg	If chest pain, S.O.B. or altered mental status -- SpO2 (if available): _____% <input checked="" type="checkbox"/> < 95%
Dia BP _____	<50 mm Hg or > 100 mm Hg	
Resp _____	< 12rpm or > 24rpm	

Risks explained to patient: _____
 Patient understands clinical situation Yes No
 Patient verbalizes understanding of risks Yes No
 Patient's plan to seek further medical evaluation: _____

Medical Command:

Physician contacted: _____ Facility: _____ Time: _____
 Command spoke to patient: Yes No Command not contacted Why? _____
 Medical Command orders: _____

Patient Outcome:

- Patient refuses treatment/ transport to a hospital against EMS advice
- Patient accepts transportation to hospital by EMS but refuses any or all treatment offered (specify treatments refused: _____)
- Patient does not desire transport to hospital by ambulance, EMS believe alternative treatment/transportation plan is reasonable

This form is being provided to me because I have refused assessment, treatment and/or transport by an EMS provider for myself or on behalf of this patient. I understand that EMS providers are not physicians and are not qualified or authorized to make a diagnosis and that their care is not a substitute for that of a physician. I recognize that there may be a serious injury or illness which could get worse without medical attention even though I (or the patient) may feel fine at the present time. I understand that I may change my mind and call 911 if treatment or assistance is needed later. I also understand that treatment is available at an emergency department 24 hours a day. I acknowledge that this advice has been explained to me by the EMS crew and that I have read this form completely and understand its terms.

 Signature (Patient or Other) Date EMS Provider Signature

 If other than patient, print name and relationship to patient Witness Signature

EMS Patient Non-Treatment and/or Non-Transport Refusal Checklist (Spanish Language Version)

EMS Agency: _____ Date: _____ Time: _____

Patient Name: _____ Age: _____ Phone #: _____

Incident Location: _____ Incident # _____

Situation of Injury/Illness: _____

Check marks in shaded areas require consult with Medical Command before patient release

Patient Assessment:

Suspected serious injury or illness based upon patient -

History, mechanism of injury, or physical examination: Yes No

18 years of age or older: Yes No Any evidence of : Suicide attempt/ideation? Yes No

Without ability to speak with guardian

Patient Oriented to:	Person	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Head Injury?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Place	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Intoxication?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Time	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Chest Pain?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Event	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Dyspnea?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
				Syncope?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

If head trauma & taking aspirin/anticoagulant? Yes No

12-lead done? Yes No

Vital Signs:	Consult Medical Command if:	If altered mental status or diabetic (optional for BLS)
Pulse _____	<50bpm or >100 bpm	Chemstrip/Glucometer: _____mg/dl <input checked="" type="checkbox"/> < 60 mg/dl
Sys BP _____	<100 mm Hg or > 200 mm Hg	If chest pain, S.O.B. or altered mental status --
Dia BP _____	<50 mm Hg or > 100 mm Hg	
Resp _____	< 12rpm or > 24rpm	

Risks explained to patient: _____

Patient understands clinical situation Yes No

Patient verbalizes understanding of risks Yes No

Patient's plan to seek further medical evaluation: _____

Medical Command:

Physician contacted: _____ Facility: _____ Time: _____

Command spoke to patient: Yes No Command not contacted Why? _____

Medical Command orders: _____

Patient Outcome:

- Patient refuses treatment/ transport to a hospital against EMS advice
- Patient accepts transportation to hospital by EMS but refuses any or all treatment offered (specify treatments refused: _____)
- Patient does not desire transport to hospital by ambulance, EMS believe alternative treatment/transportation plan is reasonable

Este formulario se me ha entregado debido a que me he rehusado a recibir una evaluación, atención o transportación del personal de EMS (servicios médicos de emergencia) para mí o para el paciente al que represento. Entiendo que los de EMS no son médicos y que no están capacitados ni autorizados para diagnosticar y que su atención no toma el lugar de la de un médico. Reconozco que pudiera haber de por medio una grave herida o enfermedad que pudiera agravarse sino se recibe atención médica aunque yo (o el paciente) me sienta bien en estos momentos. Entiendo que podría yo cambiar de idea y llamar al 911 si el cuidado o asistencia son requeridos más tarde. Además sé que dicha atención está disponible en cualquier salón de emergencia de asistencia pública las 24 horas del día. Reconozco que este consejo me ha sido explicado por el personal de la ambulancia y que he leído y entendido este formulario completamente.

Firma (Paciente u otro)
Signature (Patient or Other)

Fecha
Date

EMS, firma
EMS Provider Signature

Si no es el paciente, nombre y parentesco con el paciente (letra de imprenta)

If other than patient, print name and relationship to patient

Firma del testigo

Witness Signature

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**NON-TRANSPORT OF INDIVIDUAL PATIENTS OR CANCELLATION OF RESPONSE
STATEWIDE BLS PROTOCOL****Criteria:**

- A. EMS provider cancelled before arriving at the scene of an incident.
- B. EMS provider who has been dispatched to respond encounters an individual who denies injury/illness and has no apparent injury/illness, ~~when assessed by the EMS practitioner.~~¹
- C. EMS provider transfers care to another provider.

Exclusion Criteria:

- A. This protocol does not apply to an on-scene EMS provider evaluating a patient who is ill or injured but refuses treatment or transport – see Protocol # 111.

Procedure:**A. Cancellations:**

1. After being dispatched to an incident, an EMS provider may cancel response when following the direction of a PSAP or dispatch center. Reasons for response cancellation by the PSAP or dispatch center may include the following situations:
 - a. When the PSAP/ dispatch center diverts the responding provider to an EMS incident of higher priority, as determined by the PSAP/ dispatch center's EMD protocols and replaces the initially responding provider with another EMS provider, the initial provider may divert to the higher priority call.
 - b. When the PSAP/ dispatch center determines that another EMS agency can handle the incident more quickly or more appropriately.
 - c. When EMS providers on scene determine that a patient does not require care beyond the scope of practice of the on-scene provider, the EMS provider may cancel additional responding EMS providers. This includes cancellation of providers responding to patients who are obviously dead (see Protocol #322).
 - d. When law enforcement or fire department personnel on scene indicate that no incident or patient was found, these other public safety services may cancel responding EMS providers.
 - e. When the PSAP/ dispatch center is notified that the patient was transported by privately owned vehicle or by other means (caller, police, or other authorized personnel on the scene).
 - f. When BLS is transporting a patient that requires ALS/IALS, ALS/IALS may be cancelled if it is determined that ALS/IALS cannot rendezvous with the BLS provider in time to provide ALS care before the BLS ambulance arrives at the hospital.
2. EMS agencies or regions may have policies that require the responding provider to proceed to the scene non-emergently if the on-scene individual that recommends cancellation is not an EMS provider.

- B. Persons involved but not injured or ill:**¹ The following apply if an individual for whom an EMS provider has been dispatched to respond denies injury/illness and has no apparent injury/illness, ~~when assessed by the EMS provider.~~

1. ~~Assess mechanism of injury or history of illness patient symptoms, and assess patient for corresponding signs of injury or illness..~~
2. If individual declines care, there is no evidence of injury or illness, and the involved person has no symptoms or signs of injury/ illness, then the EMS provider has no further obligation to this individual. When assessed by an EMS provider, these individuals may refuse to allow the EMS

provider to obtain vital signs or a complete physical assessment if they appear to have the capacity to make decisions.

3. If it does not hinder treatment or transportation of injured patients, documentation on the EMS PCR should, at the minimum, include the following for each non-injured individual patient:
 - a. Name (if individual willing to provide)
 - b. History, confirming lack of significant symptoms.
 - c. Patient assessment, confirming lack of signs or findings consistent with illness/injury.
4. If serious mechanism of injury, symptoms of injury or illness, or physical exam findings are consistent with injury or illness, follow Non-Treatment and/or Non-Transport Patient Refusal or Treatment Protocol # 111.

C. Release of patients:

1. When patient care is transferred to another EMS provider, the initial provider must transfer care to an individual with an equivalent or higher level of training (e.g. EMT to EMT, ALS to ALS, ground to air medical crew) except in the following situations:
 - a. Transfer to a lower level provider is permitted by applicable protocol or when ordered by a medical command physician. (e.g. ALS agency releases patient care and/or transport to BLS agency)
 - b. Patient care needs outnumber EMS provider resources at scene and waiting for an equivalent or higher level of care provider will delay patient treatment or transport.

D. Provider Endangerment:

1. Under no circumstances should a provider be required to endanger his or her life or health to provide patient care. See Scene Safety protocol #102.

Notes:

1. Pertains to persons who have had EMS summoned on their behalf by a third party but deny being injured or ill (i.e.: a person in a minor MVA who denies complaints). This is not applicable if the patient has symptoms.

Performance Parameters:

- A. Review cases of cancellation of ALS by BLS/IALS providers for appropriateness
- B. Review cases of cancellation of IALS by BLS providers for appropriateness

**EMS VEHICLE OPERATIONS/SAFETY
STATEWIDE BLS PROTOCOL****Criteria:**

- A. All EMS operations, including incident responses and patient transports. ¹

System Requirements:

- A. EMS agencies may use this protocol to fulfill the agency's requirement for a policy regarding the management of personnel safety and the safe operation of EMS vehicles as required by EMSS Act regulation 28 Pa. Code § 1027.3 (p).

Policy:**A. Use of lights and other warning devices:**

1. **[EMS System Act regulation 28 Pa. Code § 1027.3(i)]** EMS vehicle may not use emergency lights or audible warning devices, unless they do so in accordance with standards imposed by 75 Pa.C.S. (relating to Vehicle Code) and are transporting or responding to a call involving a patient who presents or is in good faith perceived to present a combination of circumstances resulting in a need for immediate medical intervention. When transporting the patient, the need for immediate medical intervention must be beyond the capabilities of the ambulance crew using available supplies and equipment.
2. The use of L&S during response or transport should not be confused with whether a patient had an emergency condition requiring urgent assessment, treatment, or transport by EMS providers. Many patients that require emergency assessment, treatment, and transport may be appropriately and safely cared for by EMS personnel without the use of a L&S response or transport.

B. Response to incident:

1. The EMSVO is responsible for the mode of response to the scene based upon information available at dispatch. If the PSAP or dispatch center provides a response category based upon EMD criteria, EMS vehicles shall respond with L&S only when the dispatch category is consistent with a L&S response. ² Response mode may be altered based upon additional information that is received by the dispatch center while the EMS vehicle is enroute to scene.
2. L & S use is generally NOT appropriate in the following circumstances:
 - a. "Stand-bys" at the scene of any fire department-related incident that does not involve active interior structural attack, hazardous materials (see below), known injuries to firefighters or other public safety personnel or the need for immediate deployment of a rehabilitation sector.
 - b. Carbon monoxide detector alarm activations without the report of any ill persons at the scene.
 - c. Assist to another public safety agency when there is no immediate danger to life or health.
 - d. Response to a hospital for immediate interfacility transport.
 - e. Response to a medical alarm system activation.
 - f. Response to patients who have apparently expired.
 - g. EMS agencies should consider whether L&S should be used when responding to emergency requests for EMS at facilities where health care personnel are already available to patients who are not suspected to be in cardiac arrest – for example skilled nursing facilities and medical offices.
 - h. EMS agencies should consider whether L&S should be used when responding to MVCs with unknown injuries.
3. Special circumstances may justify L&S use to an emergency incident scene when the emergency vehicle is not transporting a crew for the purposes of caring for a patient:
 - a. Transportation of personnel or materials resources considered critical or essential to the management of an emergency incident scene. Transportation of human or materials resources considered critical or essential to the prevention or treatment of acute illness/injury at a medical facility or other location at which such a circumstance may occur (i.e. transportation of an amputated limb, organ retrieval, etc).

C. Patient transport:

1. The EMS provider primarily responsible for patient care during transportation will advise the driver of the appropriate mode of transportation based upon the medical condition of the patient.
2. In most situations, the use of L&S during patient transport is not indicated: ⁴
 - a. Emergent transport should be used in any situation in which the most highly trained EMS provider believes that the patient's condition will be worsened by a delay equivalent to the time that can be gained by emergent transport. Medical command may be used to assist with this decision. The justification for using this criterion should be documented on the patient care report.
 - b. Examples of Medical Conditions that May Benefit by L&S Transport
 - 1) Inability to obtain or maintain a patent airway
 - 2) Critically unstable patient with impending cardiac arrest.
 - c. The vast majority of patients will not have better medical outcomes by decreasing transport time by the time saved by L&S transport.
 - d. The patient's physiologic responses to L&S use (increased tachycardia and blood pressure) may be detrimental to some patient's medical conditions.
 - e. When EMS providers are not restrained, the increased risk of EMS vehicle crash while using L&S may increase the risk of injury to EMS providers. The extremely poor prognosis for patients transported with CPR in progress does not justify the use of L&S transport for most patients in cardiac arrest.
 - f. **When in doubt**, contact with a medical command may provide additional direction related to whether there is an urgent need to transport with L&S.
3. No emergency warning lights, or siren will be used when ALS care is not indicated (for example, ALS cancelled by BLS or ALS released by medical command). ⁵
4. Mode of transport for interfacility transfers will be based upon the medical protocol and the directions of the referring physician or medical command physician who provides the orders for patient care during the transport. Generally, interfacility transport patients have been stabilized to a point where the minimal time saved by L&S transport is not of importance to patient outcome.
5. Exceptions to these policies can be made under extraordinary circumstances (e.g., disaster conditions or a back log of high priority calls where the demand for EMS vehicles exceeds available resources). These exceptions should be documented.
6. Systems with field supervisors may consider a policy requiring notification of the supervisor before any L&S transport.

D. Other operational safety considerations:

1. The following procedures should be followed for safe EMS vehicle operations:
 - a. Operational Issues:
 - 1) Daytime running lights or low-beam headlights will always be on (functioning as daytime running lights) while operating EMS vehicles during L&S and non-L&S driving.
 - 2) L&S should **both** be used when exercising any moving privilege (examples include, proceeding through a red light or stop sign after coming to a complete stop or opposing traffic in an opposing lane or one-way street) granted to EMS vehicles that are responding or transporting in an emergency mode.
 - 3) When traveling in an opposing traffic lane, the maximum speed generally should not exceed 20 m.p.h.
 - b. PSAP and Dispatch Centers: EMS systems are encouraged to cooperate with the dispatch centers in developing procedures to "downgrade" the response of incoming units to Non-L&S when initial on-scene units determine that there is no immediate threat to life.
 - c. Documentation: The dispatch category (e.g., "code 3", "ALS emergency", etc.) that justifies L&S response should be documented on the patient care report. The justification for using L&S during transport should also be documented on the patient care report (e.g., "gunshot wound to the abdomen", "systolic BP<90", etc.).
 - d. Seat Belt and Restraint Use: Seat belts or restraints will be securely fastened to the following individuals when the vehicle is in motion:
 - 1) All EMS vehicle operators

- 2) All patients on stretcher, following manufacturer's recommendation for straps.
 - 3) All non-EMS passengers (cab and patient compartment)
 - 4) All EMS providers (when patient care allows)
 - 5) All infants and children - See Safe Transportation of Children in Ground Ambulances Guideline #124.
- e. Avoid Distracted EMSVOs
- 1) Distracted driving is responsible for many MVCs, and EMS agencies should assure that policies reduce the risk of a distracted driving accident.
 - a) EMSVOs should not view pagers, cell phone screens, text messages, or mobile data terminals or enter data into GPS devices while an EMS vehicle is in motion.
 - (1) These functions should be the responsibility of another EMS provider when another provider is in the vehicle.
 - (2) When another EMS vehicle provider is not available, the EMSVO should stop the vehicle before using a cell phone or viewing a pager.
 - (3) EMS agencies should work with PSAPs and dispatch centers to create policies that reduce distracted driving. For example, radio communication should be used instead of a pager message when communicating a message to an EMS vehicle that is known to be travelling.
- f. Sterile Cockpit Operations
- 1) When responding or transporting with L&S, there should be no communication with the EMSVO that is not specific to the mission or function of driving the vehicle.

Notes:

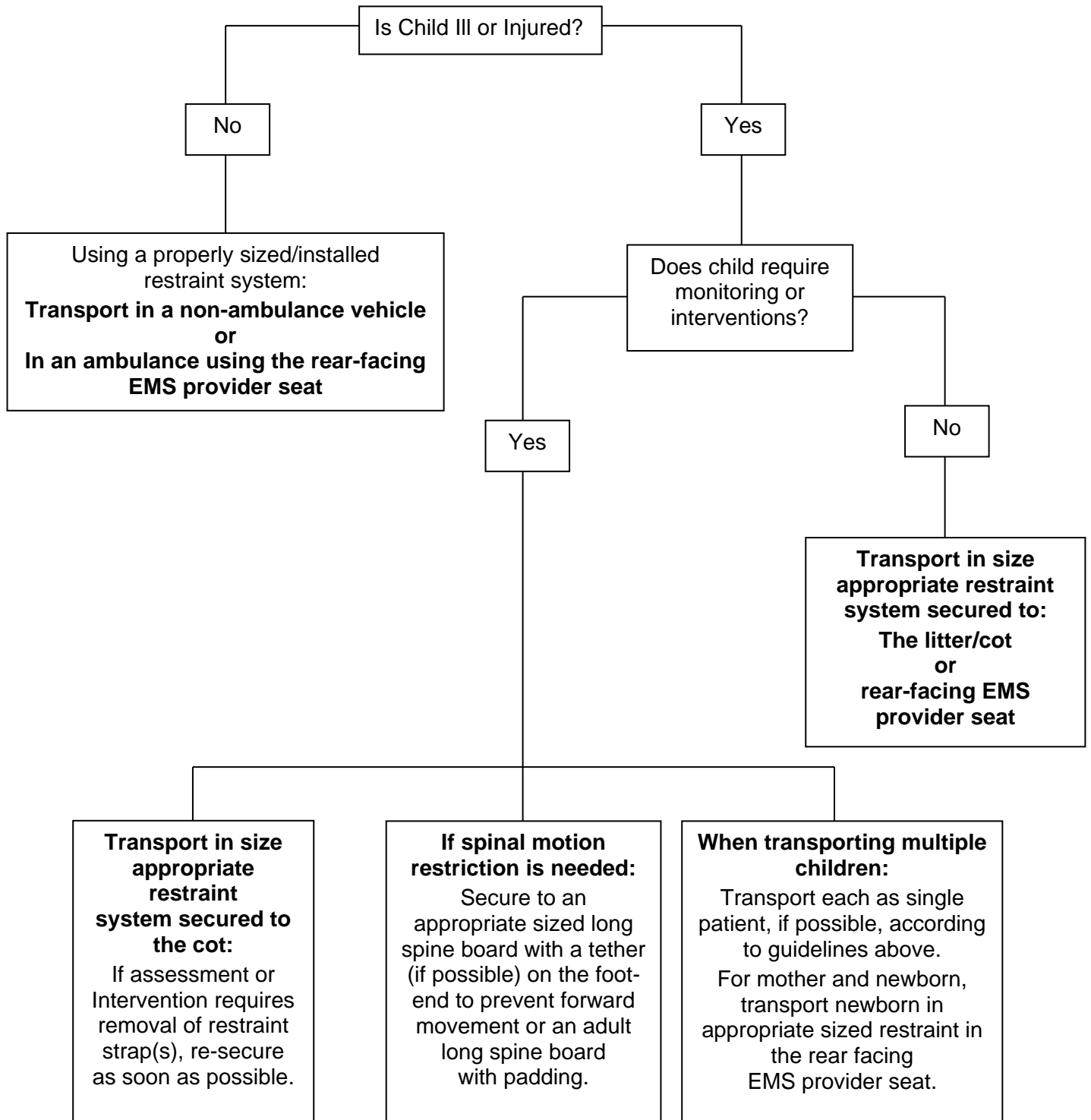
1. These guidelines are secondary to and do not supersede the Pennsylvania Motor Vehicle Code.
2. Dispatch centers/PSAPs and EMS regions are encouraged to have medically approved EMD protocols that differentiate which emergency situations or conditions are appropriate for L&S responses (for example, "Echo", "code 3", "red", etc...) from a lesser level of response (for example, "Alpha", "Bravo", "Code 2", "Yellow", etc...) based upon medical questions asked by the dispatcher. The dispatch category classification, or determinant that justifies L&S use should be documented on the PCR.
3. Firefighters cross trained as EMS providers who respond in an EMS vehicle to a fire station or fire incident in order to complete a fire apparatus crew are considered an exception to this policy.
4. In most cases (more than 95% - 99% of EMS incidents), EMS providers can perform the initial care required to stabilize the patient's condition to a point where the small amount of time gained by L&S transport will not affect the patient's medical condition or outcome. In previous studies and in most situations, L&S transport generally only decreases transport time by a couple of minutes or less.
5. L &S may be indicated in some situations where ALS is indicated, but not available or cancelled, because the ALS crew cannot rendezvous with the BLS crew prior to transport to the closest appropriate medical facility.

Performance Parameters:

- A. Review for correlation between dispatch classification/category and documented mode of response to scene.
- B. Monitor percentage of "911" calls using L&S during response to EMS calls. Routine or scheduled transports should be excluded. [Potential benchmark <50% of responses with L&S].
- C. Review for documentation of reason for L&S transport when patient does not meet criteria listed in section C.2.b.(1 & 2).
- D. Monitor percentage of urgent/emergent ("911") calls using L&S during transport. [Potential benchmark <1%% of patients transported with L&S]
- E. Treat every L&S patient transport as a sentinel event for QI and medical director review.

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**SAFE TRANSPORTATION OF CHILDREN IN GROUND AMBULANCES
STATEWIDE BLS GUIDELINE**



Use of Car Seats:
When possible, and with the exception of a minor vehicle crash (i.e. fender-bender), avoid transporting children in their own safety seats if the seat was involved in a motor vehicle crash. Use of the child's own seat can be considered if no other restraint systems are available and the seat shows no visible damage.

Transport of a child in any of the following ways is NEVER appropriate if:

- Unrestrained
- On parent/guardian's lap or held in their arms
- Using only the horizontal cot straps, if the child doesn't fit according to the manufacturer's specifications
- On the bench seat or a seat perpendicular to the vehicle's motion, i.e. seated sideways, even in a child safety seat

SAFE TRANSPORTATION OF CHILDREN IN GROUND AMBULANCES STATEWIDE BLS GUIDELINE

Criteria:

- A. These guidelines apply to every EMS response resulting in the need to transport pediatric patients who are of an age/weight that require the use of a child safety seat from the scene of an emergency. Pediatric patients that do not require a child safety seat should be transported following the same procedure as adult patients.
- B. These guidelines offer recommendations, as published by NHTSA, for the transportation of children in five (5) different possible situations:
 - a. The transport of a child who is not injured or ill.
 - b. The transport of a child who is ill and/or injured and whose condition *does not* require continuous and/or intensive medical monitoring or intervention.
 - c. The transport of an ill or injured child who *does* require continuous and/or intensive monitoring or intervention.
 - d. The transport of a child whose condition requires spinal motion restriction and/or lying flat.
 - e. The transport of a child or children who require transport as part of a multiple patient transport (newborn with mother, multiple children, etc.).
- C. These guidelines do not offer recommendations on specific child restraint systems or products. Contact the EMS for Children Program (www.paemsc.org) for child restraint information.

System Requirements:

- A. These guidelines provide general information related to the safe transportation of children in ground ambulances from emergency scenes. These guidelines are designed to work in conjunction with an agency's policies and procedures on this topic and are dependent on the availability of specialized equipment suggested in these guidelines.
- B. These guidelines do not comprehensively cover all possible situations and EMS provider judgment should be used if a situation is presented that is not addressed below.

Policy:

- A. The child's age and weight shall be considered when determining an appropriate restraint system. Child seat models offer a wide range of age/weight limits, so each individual device must be evaluated to determine the appropriateness of use.
- B. When possible, and with the exception of a minor vehicle crash (e.g. "fender-bender"), avoid transporting children in their own safety seats if the seat was involved in a motor vehicle crash. Use of the child's own seat can be considered if no other restraint systems are available, and the seat shows no visible damage/defect.
- C. Transportation of a child in any of the following ways is NEVER appropriate:
 - a. Unrestrained.
 - b. On a parent/guardian/other caregiver's lap or held in their arms.
 - c. Using only horizontal stretcher straps, if the child does not fit according to cot manufacturer's specifications for proper restraint of patients.
 - d. On the multi-occupant bench seat or any seat perpendicular to the forward motion of the vehicle, even if the child is in a child safety seat.

D. Situation Guidelines:

(**Ideal transport method is in **bold**, with acceptable alternatives listed if ideal is not achievable*)

1. Transport of an uninjured/not ill child
 - a. **Transport child in a vehicle other than a ground ambulance using a properly installed, size-appropriate child restraint system.**
 - b. Transport in a size-appropriate child seat properly installed on the rear-facing EMS provider's seat.

- c. Consider delaying the transport of the child (ensuring appropriate adult supervision) until additional vehicles are available without compromising other patients on the scene. Consult medical command if necessary.
 2. Transport of an ill/injured child *not* requiring continuous intensive medical monitoring or interventions
 - a. **Transport child in a size-appropriate child restraint system secured appropriately on the cot.**
 - b. Transport child in the EMS provider's seat in a size-appropriate restraint system.
 - c. Transport child on the cot using three horizontal straps (chest, waist, knees) and one vertical restraint across each shoulder.
 3. Transport of an ill/injured child whose condition requires continuous intensive monitoring or intervention.
 - a. **Transport child in a size-appropriate child restraint system secured appropriately to the cot.**
 - b. With the child's head at the top of the cot, secure the child to the cot with three horizontal straps and one vertical strap across each shoulder. If assessment/intervention requires the removing of restraint strap(s), restraints should be re-secured as quickly as possible.
 4. Transport of an ill/injured child who requires spinal motion restriction or lying flat.
 - a. **Secure the child to a size-appropriate spine board (when appropriate) and secure the spine board to the cot, headfirst, with a tether at the foot (if possible) to prevent forward movement, and with three horizontal restraints (chest, waist, and knees) and a vertical restraint across each shoulder.**
 - b. Secure the child to a standard spine board with padding added as needed and secure using the strap configuration listed above.
 5. Transport of a child or children requiring transport as part of a multiple patient transport (newborn with mother, multiple children, etc.).
 - a. **If possible, for multiple patients, transport each as a single patient according to the guidance provided for situations 1 through 4. For mother and newborn, transport the newborn in an approved size-appropriate restraint system in the rear-facing EMS provider seat with a belt-path that prevents both lateral and forward movement, leaving the cot for the mother.**
 - b. Consider the use of additional units to accomplish safe transport, remembering that non-patient children should be transported in non-EMS vehicles, if possible.
 - c. When available resources prevent meeting the criteria for situations 1 through 4 for all child patients, transport using space available in a non-emergency mode, exercising extreme caution and driving at a reduced speed.
 - d. **Note:** Even with childbirth in the field, it is NEVER appropriate to transport a child held in the parent/guardian/caregiver's arms or on a parent/guardian/caregiver's lap.
- E. Reference: Working Group Best-Practice Recommendations for the Safe Transportation of Children in Emergency Ground Ambulances. National Highway Traffic Safety Administration (NHTSA), September 2012, available at www.ems.gov

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REHABILITATION AT FIRE/ INCIDENT SCENE STATEWIDE BLS GUIDELINE

Criteria:

- A. The intent of rehabilitation (Rehab) is to provide a structured, consistent method for the evaluation and remediation of common ailments associated with the activities at fire / hazardous materials and incident scenes; including but not limited to overexertion, dehydration, metabolic disturbances, and exposure to temperature extremes.
 1. This guideline may be used by EMS agencies when requested to operate within an established rehabilitation area/sector at the scene of a working fire / hazardous materials, other comprehensive emergency incident, or extended training exercise.
 2. If a Rehab area has not been established at an incident scene, this guideline may still be used when providing medical monitoring to fire or other emergency personnel at an incident scene.

Procedure:

A. Primary EMS responsibilities

1. The primary responsibility of EMS personnel during Rehab is to provide medical monitoring, remediation of hypothermia/hyperthermia and emergency medical care.
2. Based on local practice/policy, EMS personnel may be involved in the other aspects of Rehab outside of their primary responsibility or other duties as assigned by the Incident Command (IC) or EMS Operations, but not to the extent which they interfere with medical monitoring and/or emergency medical care.

B. Emergency medical care

1. At any point in their Rehab period, personnel with any significant complaints (e.g. chest pain, respiratory distress, altered mental status, or trauma) should be treated using the applicable Statewide EMS protocol.
2. Medical treatment provided during Rehab must be in accordance with applicable Statewide EMS Protocol(s).
3. Appropriate notification should be made, following the Incident Command System (ICS) structure, regarding any personnel transported from the incident, refusing to cooperate with the Rehab process, returning to duty without meeting criteria for medical clearance, or who have successfully completed rehab but will not return to duty at the incident.
4. If any personnel refuse a medical assessment, treatment and/or medical advice as offered in Rehab, advise the appropriate line officer (IC, Safety Officer, etc), and follow Statewide BLS Protocol #111: **Non-Treatment and/or Non-Transport Refusal of Treatment/Transport.**

C. Equipment

1. Rehab should have the necessary EMS equipment/supplies to accommodate the nature/size of the operation. Suggested minimum equipment available should include:
 - a. Standard BLS equipment, including stethoscope, sphygmomanometer, thermometer (electronic, digital, non-tympanic), hot/cold packs, oxygen, bandages, dressings, AED, pulse oximeter (if available), and CO measuring device (co-oximeter or breath meter) (if available).
 - b. Clipboards, personnel accountability/log in sheets, tags, or other appropriate accountability and/or documentation forms.
 - c. If indicated by risk of incident, at least one ambulance (with staff) available to transport patients from the Rehab area.

D. Medical monitoring

1. Upon arrival at the scene, EMS providers should report to the IC, Rehab Officer, or other appropriate entity as designated by the ICS and confirm the EMS expectations based on the nature/scope of the incident.
2. EMS providers may be tasked with providing personnel accountability (via their documentation) within the Rehab area.
3. All personnel entering Rehab should have their initial vital signs assessed after a brief relaxation period (approximately 5 min.) (including pulse, respirations, blood pressure, and oral temperature). [See “Vital Signs Parameters” table below for range of vital signs considered to be normal for return to duty.] EMS providers should carefully monitor personnel for signs of heat stress (e.g., altered level of consciousness, abnormal vital signs, elevated temperature) and significant medical complaints (i.e., chest pain, dyspnea).
4. At any point during their Rehab period, personnel with “abnormal” vital signs should receive additional monitoring in Rehab and should not be released for further activity until their vital signs are within “normal” parameters. Personnel with continued abnormal vital signs after 20 minutes in Rehab should be **considered a patient and** treated per applicable protocol which may include transport to the Emergency Department.
 - a. **Appropriate disposition for such patients should include transportation to a hospital and/or documented consultation with Medical Command for alternative disposition should the patient not be treated or transported to the hospital.**
5. At the conclusion of their Rehab period (generally lasting at least 20 minutes in duration), personnel with “normal” vital signs and no serious signs or symptoms may be permitted to return to normal activity.
6. All vital signs and Rehab assessments should be documented. EMS agencies may choose to use a log, tag, or other means of appropriate documentation [See Emergency Scene Rehabilitation Tag in Appendix R-5]. An EMS PCR must be completed as required (e.g. for every patient transported by ambulance and every patient refusing treatment or transport).
Suggested Vital Signs Parameters

	Pulse	Respiration	Blood Pressure	Oral Temperature	Oxygen Saturation ⁶ (SpO2%) (Optional)	Carbon Monoxide Saturation ⁷ (CO%) (Optional)
Normal	>60 or ≤100	>12 or <20	Systolic: < 160 Diastolic: < 90	< 99.5°F <37.5°C	≥ 95%	Non-smoker: < 5% Smoker: < 10%
Abnormal	>100	<12 or > 20	Systolic: <90 or >160 Diastolic: >90	≥ 99.5°F ≥37.5°C	< 95%	≥ 12% (w/assoc. signs & symptoms of CO poisoning)

Appendix A: Supporting Information - Rehab Plan Development**A. Pre-Event Planning**

1. The development a comprehensive Rehab plan should be a collaborative effort between the affected emergency services agencies (i.e., law enforcement, fire/rescue, hazardous materials response teams and emergency medical services) using established national standards, including National Fire Protection Association (NFPA) Standard 1584, or Emergency Incident Rehabilitation – Federal Emergency Management Agency.
2. When possible, EMS agencies should consider assisting responder agencies in recording baseline resting vital sign measurements on active crew members that they may routinely encounter while providing Rehab. This process could assist in the overall health well-being/prevention goals of the participating agencies and strengthen inter-agency relations.
3. Responder health information may be stored in a secure manner on an ambulance or other emergency vehicle, in a manner which ensures confidentiality, until accessed for Rehab purposes.
4. Access to baseline vital signs would assist EMS providers involved in Rehab in determining abnormal deviations from patient specific “normal” values.

B. Incident Command System (ICS)

1. When circumstances/conditions warrant, the Incident Commander (IC) is responsible to ensure that a Rehab Area (Sector/Group/Unit) is established, including adequate EMS resources.
2. An individual with appropriate knowledge and experience should assume the role of Rehab Officer (position titles may vary) and follow the chain of command established by the IC. Rehab generally falls under the Logistics Section but may operate under the Operations Section in a limited ICS structure.

C. Rehab Area Logistics

1. When possible, the Rehab Area should be located in an area:
 - a. Away from hazardous conditions including smoke, run-off, and vehicle exhaust (uphill and upwind), media, and spectators.
 - b. Large enough to accommodate the expected number of personnel.
 - c. That provides adequate shelter from adverse environmental conditions (i.e. warmth in winter and shade in summer).
 - d. In close proximity to both the self-contained breathing apparatus (SCBA) exchange station and the ambulance staging area.
 - e. With access to or in close proximity to potable water (either running or bottled) and rest rooms if possible.
2. The Rehab Area should be established with a consideration for the optimal flow of personnel.

D. Rehab Operations

1. Rehab should provide a means for responder accountability during the Rehab period; all personnel entering should be logged in/out (i.e. firefighters may surrender their accountability tag on entry).
2. Personnel entering Rehab should remove excess outer clothing to extent possible to allow for passive cooling (i.e. removal of helmet, hood, turnout coat). Limit level of undress when operating in extreme cold conditions.
3. EMS personnel providing Rehab may facilitate the following:
 - a. Crew rest: all personnel should remain in Rehab for at least 20 minutes. Ideally, Rehab should contain adequate seating so personnel can rest comfortably.

- b. Rehydration: water and/or electrolytes replacement solution (i.e. sports drink) should be available to ensure **at least** sixteen (16) ounces per person, per visit. Carbonated and caffeinated beverages should be avoided.
- c. Nourishment: calorie replacement should be provided for prolonged incidents (i.e. more than 2 hours activity).

E. Rehab Specific Equipment

1. Additional Rehab specific equipment/supplies that may be of benefit may include, but is not limited to:
 - a. Tarp/tent/awning or other protection from the elements, chairs/adequate seating, towels.
 - b. Means for cooling in hot conditions (e.g., air-conditioned vehicle or building, misting fans, forearm immersion chair, etc.); means for warming in cold conditions (heated vehicle or building, blankets, auxiliary heater).
 - c. Potable water, electrolyte replacement solutions.
 - d. Calorie/carbohydrate replacement snacks.
 - e. Broth, soup, or other more significant nourishment for prolonged incidents.
 - f. Means for washing hands and face; either antibacterial soap and water or pre-moistened towelettes.

**PATIENT DESTINATION – GROUND TRANSPORT
STATEWIDE BLS PROTOCOL**

Purpose:

- A. This protocol shall ensure that when a ground ambulance agency 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. Deviation from protocol for this section is permitted when exigent or emergent situation exists. Proper documentation must be provided.

Policy:**A. Patients transported from prehospital scenes**

- 1 **Transport to closest hospital.**¹ Unless specifically permitted by this protocol Patients transported by ground ambulance shall be transported to the closest receiving facility unless any of the below exceptions apply. 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.**³ 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., a 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”)⁴ expresses a preference for transport to a different facility. In the case of veterans, it is acceptable to transport a patient to a veteran's hospital that has an emergency department if the facility meets other requirements of this patient choice exception. 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, but 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 crew or by the EMS agency management, may make it hazardous to transport the patient to some of the agency's usual receiving facilities. In this case, agencies may choose to restrict transportation to the closest receiving facility that can be reached safely.
- 5 **Category I or Category II Trauma Patient exception.**³ Follow the Trauma Patient Destination Protocol (#180) for a patient that meets the Trauma Patient Destination Criteria for transport to an accredited trauma center.
 - a. 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.
- 6 **Burn exception.** A ground ambulance may transport a patient with a burn to the closest verified burn center if the patient has a serious burn as defined in the Statewide Burn Protocols (#671/#6071), the patient is believed to be stable for the anticipated transport time, and the difference in transport time is reasonable. If transport to a trauma center is indicated by the Trauma Destination Criteria in protocol #180, transport to an appropriate trauma center takes priority over a burn center.
- 7 **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 primary percutaneous coronary intervention (PPCI).
 - a. Follow Chest Pain/Suspected Acute Coronary Syndrome protocol # 501/5001.
 - b. Appropriate emergency PPCI centers include facilities with one of the following:
 - 1) Facilities, licensed by the Department, that provide either a) open heart surgery or b) percutaneous coronary intervention (PCI) with an exemption of requirement for open heart surgery. Facilities that provide emergency PCI are expected to provide these services 24 hours per day. NOTE – Facilities licensed to provide only diagnostic cardiac catheterization are NOT appropriate destinations for EMS patients with STEMI.
 - 2) Facilities certified as a Primary Heart Attack Center by The Joint Commission/American Heart Association or certified as a Chest Pain Center with PPCI by the American College of Cardiology
 - c. 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.
 - d. 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.
 - e. 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.
- 8 **Stroke exception.**³ A ground ambulance may transport a patient with suspected acute stroke to an acute stroke ready hospital, primary stroke center, thrombectomy-capable stroke center, or comprehensive stroke center.
 - a. Follow Suspected Stroke protocol #706/7006.
 - b. The Department of Health maintains a listing of recognized stroke centers. Found at <https://www.health.pa.gov/topics/EMS/Pages/Recognized-Stroke-Centers.aspx>
 - c. It is reasonable to bypass a closer facility and transport directly to the closest primary stroke center, thrombectomy-capable stroke center, or comprehensive stroke center if the ground transport time is < 45 minutes. Otherwise transport to an acute stroke ready hospital, if that facility can be reached within 45 minutes.

- d. 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 acute stroke ready hospital, primary stroke center, thrombectomy-capable stroke center, or comprehensive stroke center, the EMS provider should contact a medical command physician to assist with destination decision.
 - e. Contact medical command if the patient or a person with legal authority to act for the patient refuses transport to the closest appropriate stroke center.
- 9 **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.
- 10 **Pregnancy exception.** A ground ambulance may transport a patient with any pregnancy-related complaint ~~who is at or beyond 20 weeks gestational age~~ to the closest receiving facility with a licensed obstetrical care unit if the patient is believed to be stable for the anticipated transport time.
 - a. Follow Emergency Childbirth Protocol #781.
 - b. It is reasonable to bypass a closer facility and transport directly to the closest facility with a licensed obstetrical care unit if the ground transport time is <45 minutes. Otherwise transport to a closer appropriate facility.
 - c. If the patient appears to be in active labor or there are complicated delivery conditions, contact medical command as soon as possible. Contact medical command prior to leaving scene, if possible, to assist with destination decision if needed.
 - d. If the patient refuses transport to the closest facility with a licensed obstetrical care unit, contact medical command.
- 11 **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 agency may not consider a receiving facility to be on divert unless that facility has notified the ground ambulance agency of the divert condition through local or regional EMS councils, county or local PSAP, or the state Healthcare Incident Management System (HIMS).
- 12 **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.
- 13 **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 #901/9001 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 EMSS 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 System Act of 2009.

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 mmHg)
- 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)

—YES→

NO

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:

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

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).

—YES→

NO

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

**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: ²
 - 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: ³

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) ^{4,5} 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 ≤ 45 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 ≤ 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 ≤ 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

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,^{4,5} 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 agency. The incident command system, when in place, should be used to accomplish this request. The PSAP should initially contact the air ambulance agency 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 agencies 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^{6,7}, an 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.
 - 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 agency or an air ambulance unless the ALS agency 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.

**AIR MEDICAL TRANSPORT FOR NON-TRAUMA PATIENTS
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Patient with ST-elevation myocardial infarction (STEMI) for whom air transport is considered.
- B. Patient with acute stroke symptoms for whom air transport is considered.
- C. Patient with any medical emergency for which direct air medical transport from the scene is being considered.

Exclusion Criteria:

- A. Patient requiring air medical transport for traumatic injury – See Trauma Patient Destination Protocol #180

Possible Medical Command Orders:

- A. Authorization of Air Ambulance transport for the patient
- B. Transport by ground to appropriate facility (local hospital or more distant hospital for specialized care).

Policy:

- A. Medical considerations when requesting air ambulance transport:
 - 1. Extremely critical patients that are rapidly worsening:
 - a. Patients with the following conditions should be transported as rapidly as possible to the closest receiving hospital:
 - 1) Patients without an adequate airway.
 - 2) Patients that cannot be adequately ventilated
 - 3) Other patients, as determined by a medical command physician, whose lives would be jeopardized by transportation to any but the closest receiving hospital.
 - b. Transport should generally not be delayed while awaiting the arrival of ALS agency or air ambulance unless the ALS agency or air ambulance has a confirmed ETA to the scene that is less than the ETA to the closest hospital.
 - c. STEMI patients:
 - 1) A 12-lead ECG should be obtained before contact with medical command to request air transport for a patient with suspected STEMI. Also follow Suspected Acute Coronary Syndrome protocol #5001. For the best patient care, it is ideal that this ECG be transmitted to the medical command facility and (eventually) to the receiving facility once determined.
 - 2) Transport the patient by ground if driving time to the specialty center capable of providing emergency primary percutaneous coronary intervention (PPCI) is less than 30-45 minutes.
 - d. Acute stroke patients:
 - 1) Consider air medical transport if ground transport to the nearest certified stroke center is > 45 minutes AND patient was last seen well within the last 3 hours. Contact with medical command should be used to determine whether patients with stroke symptoms should be transported by air and which stroke level of stroke center is the most appropriate destination. Also follow Stroke protocol #706/7006.
 - 2) The time urgency for acute stroke patients applies to patients who are candidates for thrombolytic therapy. Patients with contraindications to thrombolytic therapy should not

be transported by air solely for the purpose of reducing transport time to a stroke center.

- 3) Transport the patient by ground if driving time to the certified primary, thrombectomy-capable, or comprehensive stroke center is less than 45 minutes.
- e. Other patients requiring specialty care not available at closest hospital
 - 1) Transport the patient by ground if driving time to the specialty center (burn center, etc.) is less than 45 minutes.

B. Air medical transport considerations:

1. When considering 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 Public Safety Answering Point (PSAP) without requesting a specific air ambulance agency. The PSAP should initially contact the air ambulance agency 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 \leq 8 may benefit from advanced airway techniques that the air medical crew can perform.
 - b. Air ambulances may transport specialized medical teams for the treatment of unusual situations (for example, neonatal teams). Although gathering a specialized team may dramatically lengthen the time to arrival of the air ambulance to the scene.
4. Prolonged delays at scene while awaiting air medical transport should be avoided.

C. Considerations related to contact with medical command:

1. **Medical command must be contacted, when possible, for approval for air medical transport for any non-trauma patient that the EMS provider believes would benefit by air medical transport.**
2. The EMS provider should contact a medical command facility accessible to the EMS provider using the following order of preference:
 - a. The closest specialty facility (based upon the patient's medical condition) that is also a medical command facility. For example, the closest center capable of emergency PCI for patient with STEMI. Regional protocol may establish a list of emergency STEMI centers or stroke centers.
 - b. The closest medical command facility. In regions where the EMS provider is not aware of the location of the closest facility capable of handling the patient's needs, the closest medical command facility should be contacted. If the closest medical command facility orders air transport to a further away specialty center, then the EMS provider should also contact the specialty receiving center, preferably via their medical command facility, as soon as possible to provide patient information.
3. If the patient will be transported by air ambulance, the air ambulance crew will determine the destination, and they will transport the patient to the closest facility that can provide the specialized care.

Performance Parameters:

- A. 100% audit of all cases for appropriate use of air medical evacuation and appropriate use of other applicable protocols (e.g. Chest pain, CVA)

TRAUMA PATIENT DESTINATION – AIR TRANSPORT STATEWIDE BLS PROTOCOL

Purpose:

- A. This protocol shall ensure that when an air ambulance agency 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.**¹ 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
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 these 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.**^{3,4,5} 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.**^{3,4,5} 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.**^{3,4,5} An air ambulance may transport a patient with serious burns⁶ 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.**³ 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 agency may not consider a trauma center to be on divert for trauma patients unless that center has notified the air ambulance agency of the divert condition. This notification from the trauma center may be through the air ambulance agency'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.
9. **Patient choice exception.**³ 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")⁷ makes an unsolicited request for transport to a different facility. This is subject to the following:
- 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 make the transport to the trauma center hazardous, and the travel time to the trauma center is excessive.
10. **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 agency 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 agency may require that medical command orders received from a receiving facility's medical command be verified or adjusted by the air ambulance agency's primary medical command but this should be a rare exception.
- D. Resources to assist air medical agencies.** When available, the most current Department records of the following resources shall be used to assist an air medical agency when using this protocol, unless the air ambulance agency 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.
 - c. Centers capable of providing hyperbaric oxygen therapy
 - d. Centers capable of extracorporeal rewarming (cardiac bypass)
 2. Designated method of contacting each trauma center, including preferred radio frequency or Phone number.

NOTES:

1. “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 D.1.a.). This definition of trauma center applies throughout this protocol.
2. “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.
3. 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.
4. 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.
5. This exception shall not be used in conjunction with or cumulative to any other exception.
6. Serious burns are defined as burns that meet the American Burn Association or American College of Surgeons burn unit referral criteria.
7. 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 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:

- A. This protocol applies to all persons regulated under the EMSS 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.
- B. This protocol is issued pursuant to section §8105(c) of the EMSS Act, 35 Pa.C.S. §8105(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.

AIR AMBULANCE SAFETY CONSIDERATIONS STATEWIDE BLS PROTOCOL

Criteria:

- A. Landing zone operations associated with use of an air ambulance.

Exclusion Criteria:

- A. These guidelines provide general information related to safety when interacting with air ambulances. This general information may augment information that is provided by local air ambulance agencies, but since specific recommendations may differ by aircraft type or other factors it is not meant to such information.

Procedure:

A. Landing Zone (LZ) Recommendations :

1. Location:

- a. Global Positioning Satellite (GPS) systems may assist providing precise location of LZ.

2. Size:

- a. Depends on size of aircraft, most use 100' x 100'.
- b. A larger LZ is recommended when higher surroundings and obstacles are present or multiple aircraft are responding.

3. Slope:

- a. Must be relatively level.

4. Ground cover:

- a. Dust can cause "brown out" where dust generated by rotor wash obscures pilot's visualization.
- b. Snow can cause "white out".
- c. Both can be planned for and overcome by pilot—be prepared for lots of blowing debris.
- d. Gravel—rotor wash throws gravel—broken windows, paint damage, eye injuries can occur.
- e. Other—be aware of anything in and around LZ such as twigs, tents, charts, linen, mattresses, rope, scene tape, garbage cans, turnout gear, rescue and medical equipment.
- f. Mud—aircraft can sink resulting in structural damage and difficulty taking off.
- g. Brush--should not be more than 1-2 ft deep, may need to be cut or tramped down.

5. Obstacles:

- a. Antennas, buildings, towers, wires, poles, hills, etc up to a mile from the LZ should be reported to the pilot. Do not assume that they see them.
- b. Other obstacles in the immediate vicinity of the LZ must be identified and relayed to the aircraft by the LZ Officer--Wires, poles, signs, antennas, trees, fences, geography, ground depressions, livestock, bystanders, apparatus and other vehicles, buildings, grave markers, etc.

6. Using roadways as LZ:

- a. **NO** vehicular traffic through LZ, including police, fire, and EMS vehicles.
- b. **NO** pedestrian traffic.
- c. PSP and local police maintain authority in decision to close roadways and thoroughfares.

B. Marking the LZ:

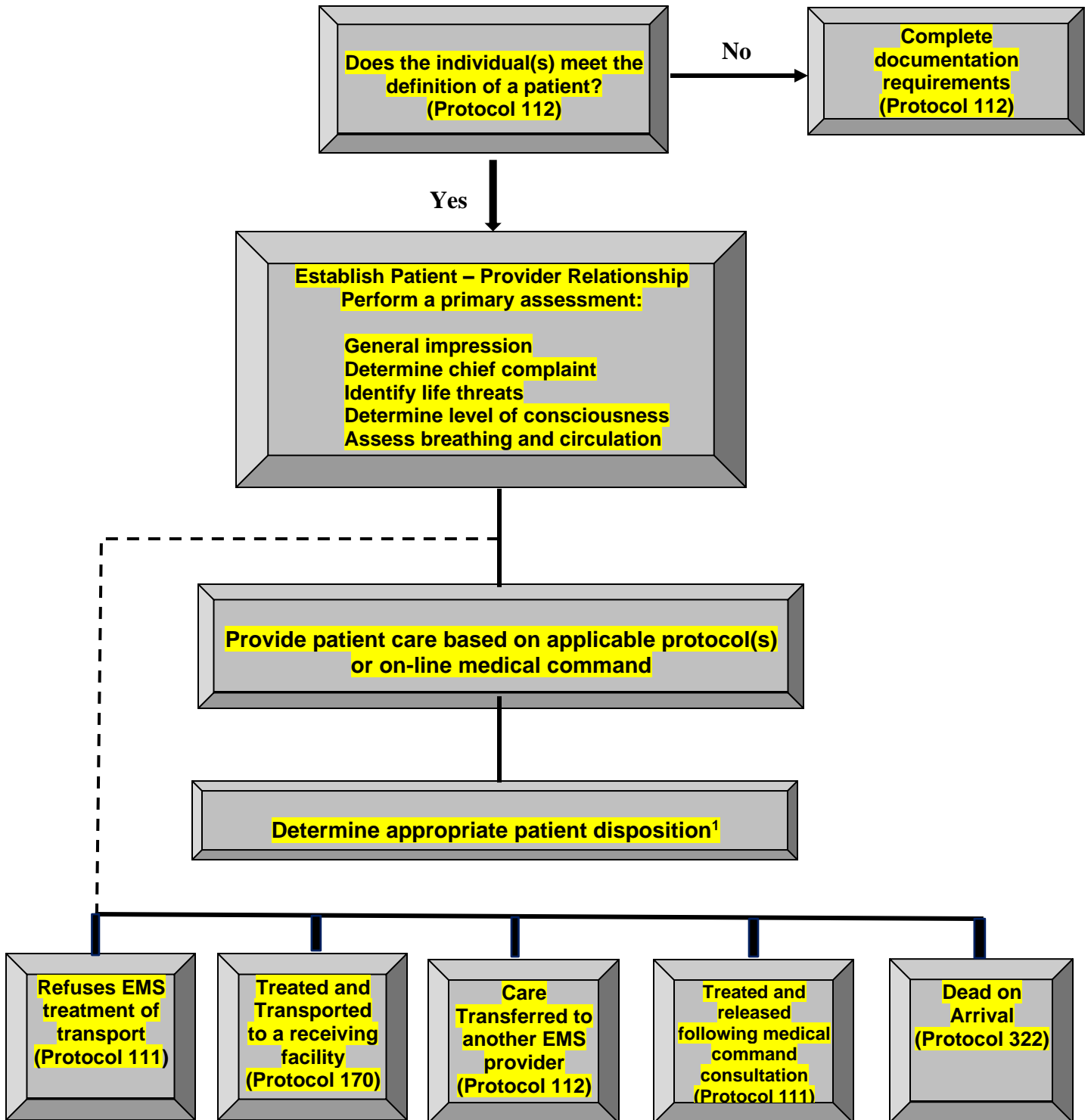
- 1. Mark 4 corners of desired landing spot with a 5th marker on side wind is coming from, so that the pilot can determine wind direction for landing
- 2. **DO NOT POINT WHITE LIGHTS AT THE AIRCRAFT AT ANY TIME!!!** (Blinds pilot, ruins night vision.)
- 3. Flares
 - a. Good at night can be seen from a great distance.

- b. Limited use during the day, hard to see from the air.
 - c. Be aware of fire potential caused by rotor wash.
 - d. Be sure to collect after use.
4. Traffic cones
 - a. Easy to see in daylight.
 - b. Blown over easily unless weighted.
 - c. Not useful at night unless internally illuminated by very bright light.
 5. Strobes **are not useful**.
 6. Vehicles **are not recommended, as they become obstacles**.
 7. Personnel **are not recommended as markers**.
 8. Rotating red, yellow, or blue lights
 - a. Easy to see at night from miles away.
 - b. Pilot may ask for them to be turned off after LZ is identified depending on overall illumination
 9. Miscellaneous:
 - a. Control bystanders to prevent their approach to aircraft and LZ.
 - b. Pilot always has the final say in LZ acceptance.
 - c. Many variables occur even if LZ has been used in the past.

C. Rotor craft safety:

1. All personnel should be outside LZ during landing and take-off.
2. Never approach the aircraft unless requested or accompanied by air ambulance crewmember from the air ambulance.
3. Never open doors or operate aircraft mechanisms under routine conditions.
4. Never approach aircraft from front or back—only from the side and only when requested by a crewmember.
5. Tail rotor spins at high rate making it difficult to see and avoid, some are close to the ground (within striking distance to humans).
6. Main rotor systems vary widely—some types come within 4-5 ft of ground.
7. No running near aircraft.
8. No smoking within 100 ft (jet fuel and oxygen present).
9. No vehicles inside LZ.
10. Never approach or depart from an aircraft on a side where the ground is higher than the ground the aircraft is sitting on.
11. All loose objects must be secured before aircraft lands and departs.
12. Close all vehicle doors during landing and takeoff.
13. An engine company at LZ is not necessary unless required by local protocol.
14. Hot Loading:
 - a. Follow air ambulance crew direction carefully.
 - b. Wear turnout gear if available including eye, head, and ear protection.
 - c. Remove all baseball caps and hats and store safely.
 - d. Approach Aircraft only when accompanied by air ambulance crew.
 - e. After loading the patient, depart aircraft and LZ by the exact path used to enter.
 - f. Never carry anything that is higher than the level of your head (including IV bags.)

**INITIAL PATIENT CONTACT
STATEWIDE BLS PROTOCOL**



Notes:

1. After establishing a patient-provider relationship, all patients will fall into one of the above categories. A PCR and other appropriate documentation is **REQUIRED** for all patient dispositions.

**INITIAL PATIENT CONTACT
STATEWIDE BLS PROTOCOL****Criteria:**

- A. All patients.

Exclusion Criteria:

- ~~A. None~~ Individuals not defined as patients per Protocol #112
- B. Mass casualty incidents where the number of patients exceed the number of available EMS providers or equipment.

Procedure:**A. Scene Size-Up:**

1. Evaluate scene safety – see Protocol # 102.
 - a. If scene is unsafe and cannot be made safe, do not enter.
2. Utilize appropriate Body Substance Isolation / Universal Precautions – see Protocol # 103.
3. Determine Mechanism of injury (MOI) or nature of illness and number of patients.
 - a. Initiate local or regional mass casualty plan if the number of surviving patients exceeds the threshold for initiating such plan (in accordance with applicable regional protocol). Call for additional BLS/ ALS ambulances if needed.
4. Summon ALS or air ambulance agency, if indicated and available.

B. All Patients:

1. ALL providers have an equal and shared responsibility to care for and treat all patients.
2. Providers shall ensure all necessary equipment needed to perform a thorough assessment based on patient information available, is present at the time of initial patient contact.
3. If trauma MOI, stabilize cervical spine during assessment.
4. Establish a provider-patient relationship by performing a primary ~~initial~~ assessment. (Form a general impression of the patient; determine the chief complaint and/or life-threatening problems; determine responsiveness and level of consciousness; assess airway and breathing; assess circulation.)¹
 - a. Once a provider-patient relationship has been established, the EMS providers have a responsibility to the patient until appropriate transfer of care or appropriate disposition according to protocol.
5. Assure open airway; proceed with obstructed airway treatment if needed.
6. If pulseless, proceed to appropriate protocol:
 - a. DOA protocol # 322 or OOH-DNR protocol # 324 if indicated, or
 - b. Cardiac Arrest (General) protocol #331, or
 - c. Cardiac Arrest (Traumatic) protocol # 332 if a traumatic injury is clearly responsible for patient's cardiac arrest.
7. If breathing is inadequate, ventilate patient as needed.
8. Control any serious or uncontrolled bleeding – see Protocol #601
9. Obtain history (SAMPLE & OPQRST) and perform focused physical exam full set of baseline vital signs² within five (5) minutes of patient contact. This includes
 - a. Blood pressure
 - b. Heart rate
 - c. Respiratory rate
 - d. SpO₂
 - e. ~~Blood glucose if altered mental status~~ If altered mental status, obtain blood glucose (if equipped).
 - f. [OPTIONAL] If patient has chest pain that may be of cardiac origin, obtain and transmit 12-lead ECG if BLS agency has this capability. See Protocol #250.

10. Treat ~~and transport~~ per applicable protocol(s) ~~and transport~~.

11. Nausea may be improved by allowing patient to smell or sniff an open alcohol prep/wipe.

Notes:

1. If assessment of patient justifies ALS or air medical care, summon ALS or air ambulance agency if available and not already dispatched. See Indications for ALS Use protocol #210 and Trauma Patient Destination protocol # 180.
2. Vital signs should be obtained and documented at least every five (5) minutes for unstable patients and at least every fifteen (15) minutes for stable patients unless noted in applicable treatment protocol.

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OXYGEN ADMINISTRATION STATEWIDE BLS PROTOCOL

Criteria:

- A.** Patient presenting with one of the following conditions:
 - 1. Shock
 - 2. Shortness of breath or respiratory distress
 - 3. Inhalation injury/ toxicity (including carbon monoxide exposure, smoke inhalation, chemical inhalation, etc...)
 - 4. Suspected or known stroke or seizure
 - 5. Chest pain
 - 6. Suspected or known major trauma
 - 7. Acute change in level of consciousness
 - 8. Patient whose condition seems serious during initial assessment
 - 9. Patient with priority condition on Initial Patient Contact (protocol #201)
 - 10. Patients who normally receive oxygen as part of their usual medical care

Exclusion Criteria:

- A.** Patient without any of the criteria listed above

System Requirements:

- A.** Pulse oximetry must be carried by BLS ambulance and squad vehicles for use by the agency's EMTs.
- B.** Pulse oximetry is **not** within the scope of practice of an EMR, and references to pulse oximetry within the Statewide BLS Protocols are not applicable to EMRs.

Procedure:**A. All patients:**

- 1. Apply oxygen:
 - a. Administer high concentration oxygen as directed by specific treatment protocol for the patient's condition.
 - 1) Patients with ischemic conditions may be harmed by high plasma oxygen concentrations. Avoid routine use of NRB oxygen in these patients. Unless indicated by other complications, apply oxygen only if room air SpO₂ is <95% and titrate oxygen to attain SpO₂ in range of 95-99%:
 - a) ST-elevation MI
 - b) Suspected stroke
 - c) Post-cardiac arrest with ROSC
 - 2) Patients who require high concentration oxygen per specific protocols should receive oxygen via non-rebreather mask, except:
 - a) If patient will not tolerate oxygen mask, use a nasal cannula at 4-6 liters per minute (lpm).
 - b. Administer oxygen by nasal cannula if high concentration oxygen is not required.
 - 1) Administer oxygen by nasal cannula if needed to attain SpO₂ in range of 95-99%. Note- this does not apply to patients with suspected carbon monoxide or cyanide exposure. These patients should receive 100% O₂ via NRB mask.
- 2. Be prepared to assist ventilations as necessary. If ventilation is required, high concentration oxygen should be given through the Bag-Valve device.
- 3. Patients who normally receive oxygen as part of their usual medical care should be kept on their prescribed rate, unless presenting with one of the criteria listed above.

B. Pediatric patients:

- 1. Use appropriate size facemask or nasal cannula for pediatric patients.

- a. If the pediatric patient will not tolerate the mask or cannula, use blow-by oxygen via oxygen extension tubing.
-

Notes:

1. ~~Respiratory efforts may be suppressed by high concentration oxygen in patients with obstructive lung diseases (e.g. COPD), but if the patient has a condition requiring high concentration oxygen, it is more important to maximize oxygenation. Providers should reassess the patient for signs of respiratory depression and should be prepared to assist ventilations if needed.~~

**ABUSE & NEGLECT (CHILD & ELDER)
STATEWIDE BLS PROTOCOL****Criteria:**

- A.** Any victim of suspected child abuse: ¹
1. The following situations may be associated with child abuse:
 - a. Poor nutrition and/or care including unsanitary or dangerous environment
 - b. Delay in seeking treatment for obviously significant medical problem
 - c. Patient, parent, or caregiver give significantly differing histories of injury or illness
 - d. History of minor trauma in a child with extensive physical injuries
 - e. Caregiver ascribes blame for serious injuries to a younger sibling or playmate
 2. Possible physical exam findings associated with such abuse or neglect may include:
 - a. Injured child less than two years old, especially hot water burns and fractures
 - b. Facial, mouth or genital injuries
 - c. Multiplanar injuries (front and back, right and left)
 - d. Injuries of different ages (old and new)
 - e. Comatose child with no clear cause
 - f. Critically ill or injured child with no clear cause
 - g. Child in cardiac or respiratory arrest with no clear cause
- B.** Any victim of suspected elder abuse:
1. The following situations may be associated with elder abuse:
 - a. Implausible explanation of physical findings
 - b. Delay in seeking care for illness or injury
 - c. "Doctor shopping," frequent emergency department visits or frequent use of EMS (NOTE: This statement must not be mistaken for those persons who have serious illness and legitimate reasons for utilization of acute care medical services)
 - d. Fear or distancing self from caregiver
 - e. Caregiver's refusal to leave elder alone
 2. Possible physical exam findings associated with such abuse or neglect may include:
 - a. Bruises in unusual areas (inner arm, torso, buttocks, scalp)
 - b. Patterned or multicolored bruises of different ages, abrasions or burns
 - c. Clothing soiled or inappropriate for season
 - d. Inadequate care of nails, teeth or skin
 - e. Pressure sores (decubitus ulcers)
 - f. Bruised and/or bleeding genitalia, perineum or anal area
 - g. Dehydration, malnutrition or unexpected weight loss
 - h. Unsafe or unhygienic living environment

Exclusion Criteria:

- A.** None

Procedure:

- A. All patients:**
1. Treat any injuries/illness according to standard protocol.
 2. When time permits, perform a visual inspection of the patient's surroundings looking for injury or abuse risk factors that may be associated with the patient's complaints.
 3. EMS Provider – patient/family interaction:
 - a. **DO NOT** question or accuse the caretaker in cases of possible abuse or neglect.
 - b. **DO NOT** discuss possible abuse or neglect issues with the patient in the presence of the abuser or other family members.
 4. Transport, if possible. Protect the individual from additional harm by encouraging transport to receiving facility, even if injuries appear to be minor.
 - a. If transported to receiving facility, report concerns to staff at receiving facility **and** to appropriate agencies as required. (See section A.5.)

- b. If patient, parent or guardian refuses transport, see **Non-Treatment and/or Non-Transport of Patient Refusal of Treatment/Transport** protocol #111.
 - 1) Contact medical command.
 - 2) If the medical command physician agrees, contact the law enforcement authority having jurisdiction or the appropriate county protective services agency.
 - 3) **DO NOT** endanger yourself or the EMS crew by inciting a confrontation with family members, relatives or caregivers. If you feel threatened, leave the scene for a safe refuge and immediately contact law enforcement agency having jurisdiction.
5. Report suspicion of abuse or neglect to appropriate authorities as required whether or not the patient was transported.
 - a. **Suspected Child Abuse (minors under 18 years of age):** ^{1,2}
 - 1) If an EMS provider has reasonable cause to suspect that a child (minor) has been abused or neglected, the provider must report the suspected abuse in one of the two following ways:
 - a) Verbally by immediately calling the PA ChildLine at 800-932-0313, **AND** by completing a CY-47 form, which must be submitted to the appropriate county Children and Youth agency within 48 hours.
 - b) Electronically, by making a report online at <https://www.compass.state.pa.us/CWIS>
 - b. **Suspected Elder Abuse (individuals 60 years of age or older):** ²
 - 1) If an EMS provider has reasonable cause to suspect that an individual 60 years of age or older needs protective services, the provider may report that information. ["Protective services" are activities, resources and supports to detect, prevent or eliminate abuse, neglect, exploitation, and abandonment.]
 - a) The suspected abuse, neglect or needs **may be reported immediately** in verbal form to the PA Elder Abuse Hotline at 800-490-8505.
 - b) The suspected abuse or concerns may be reported to the local provider of protective services.
6. Document ³

Notes:

1. Pennsylvania law requires mandatory reporting by health care practitioners, including EMS providers, of any child in whom there is reasonable cause to suspect abuse.
2. **Reporting mechanisms:**
 - a. In addition to the required reporting to the abuse hotline or protective service agency, always report suspicion of child or elder abuse or neglected to the receiving physician.
 - b. Some hospital social service departments may assist EMS providers in making the required contacts and reports, but in cases where reporting of suspected abuse is required, it remains the EMS provider's responsibility to assure that these reports have been made.
 - c. The local law enforcement agency must be contacted if the EMS provider believes that the patient is in imminent danger of death or serious injury. They should also be contacted when there is evidence of physical or sexual abuse, since these two forms of abuse constitute assault.
 - d. Knowing whether or not abuse has occurred is sometimes difficult. The Department of Human Resources hotline call-takers will provide assistance.
3. **Documentation considerations:**
 - a. The documentation for an EMS contact with a potential victim of abuse or neglect must be comprehensive and objective in nature.
 - b. Document history of present illness/injury in detail but avoid taking the patient's complaints out of context. Note pertinent positives and negatives only as the patient or caregiver answered them, not as the EMS provider believes they may exist.
 - c. Document physical findings exactly as they appear, but avoid making statements that cannot be attested to in a court of law (exact age of contusions, exact cause of injury, etc.)
 - d. Document environmental and household findings exactly as they appear but avoid making generalizations and editorial comments (i.e. "numerous overfilled trash cans," rather than "the house was a mess").
 - e. Document which authorities were contacted and when

HUMAN TRAFFICKING STATEWIDE BLS GUIDELINE

Purpose:

- A.** Human trafficking is a serious human rights problem. Traffickers control their victims through physical, sexual, financial, and emotional manipulation. Trafficking is often associated with physical and psychological violence. By having access to a scene, EMS providers have a unique opportunity to observe the patient's social environment and identify individuals who may be victims of human trafficking. The purpose of this guideline is to provide information to assist EMS providers in identifying and treating a potential victim of human trafficking.
- B.** Definition: Human trafficking is the use of force, fraud, or coercion to exploit someone for labor or commercial sex. Any individual <18 years old exploited for commercial sex is a victim of human trafficking. Mandatory reporting applies to any suspected victim of human trafficking who is under the age of 18 – See Child Abuse & Neglect Protocol #204.

Criteria:

- A.** Any victim of suspected human trafficking:
 - 1. The following situations may be associated with human trafficking:
 - a. Is the patient accompanied by another person who seems controlling? A person accompanying your patient is reluctant or unwilling to leave the patient with the care team. Traffickers may present themselves as a partner, family member, friend, or advocate. Traffickers may also actually be a partner or family member.
 - b. Does the person accompanying the patient insist on giving information/talking?
 - c. Does the patient have trouble communicating due to language/cultural barrier?
 - d. Are the patient's identification documents (e.g., passport, driver's license) being held or controlled by someone else?
 - e. Does the patient appear submissive or fearful?
 - f. Is the patient inadequately dressed for the situation/ work they do?
 - g. Are there security measures designed to keep the patient on the premises?
 - h. Does the patient live in a degraded, unsuitable place/share sleeping quarters?
 - i. The patient has a vague or inconsistent history of present illness or injury, or the history is inconsistent with the complaint or injury.
 - j. A trafficked patient may have an unexpected demeanor; he or she may be irritable or anxious, have a flat affect, or offer poor eye contact.
 - k. A trafficked patient may become apprehensive or hostile when law enforcement is referenced.
 - l. A trafficked patient may not know his or her home address.
 - m. A trafficked patient may not be in possession of his or her identification card(s) or may have unexpectedly few personal items.
 - 2. Victims of human trafficking may look like many of the people you help. Classical presentations found in trafficking victims include:
 - a. Bruises in various stages of healing caused by physical abuse
 - b. Scars, mutilations, or infections due to improper medical care
 - c. Urinary difficulties, pelvic pain, pregnancy, or rectal trauma caused from working in sex industry
 - d. Chronic back, hearing, cardiovascular, or respiratory problems as a result of forced manual labor in unsafe conditions
 - e. Malnourishment and/or serious dental problems
 - f. Disorientation, confusion, phobias, or panic attacks caused by daily mental abuse, torture, and culture shock

Procedure:

A. All patients:

- 1. Treat any injuries/illness according to standard protocol.

2. When time permits, perform a visual inspection of the patient's surroundings looking for injury or risk factors that may be associated with trafficking.
3. EMS Provider – patient/family interaction:
 - a. Interviewing Tips:
 - 1) If it can be done safely, separate the potential victim from accompanying persons
 - 2) Foster trust and build rapport with patient
 - 3) Maintain eye contact
 - 4) Meet immediate physical needs
 - 5) Ask specific questions about safety
 - 6) Avoid terms like “coercion”, “sex worker”, “trafficking victim”, “call girl”, “escort”, or “pimp”.
 - b. DO NOT be afraid to ask:
 - 1) Where do you live?
 - 2) Who takes care of you?
 - 3) Do you feel trapped in your situation?
 - 4) Is anyone forcing you to do things you do not want to do?
 - 5) Has anyone threatened your family?
 - 6) Tell me about your tattoo.
 - 7) Has anyone at home or work ever physically harmed you?
 - 8) Have you ever been denied food, water, sleep, or medical care?
4. Transport, if possible. Protect the individual from additional harm by encouraging transport to receiving facility, even if injuries appear to be minor.
 - a. If transported to receiving facility, report concerns of possible trafficking to the receiving physician at the receiving facility.
 - b. If patient, parent or guardian refuses transport, see **Non-Treatment and/or Non-Transport of Patient Refusal of Treatment/Transport** protocol #111.
 - 1) Contact medical command.
 - 2) If the medical command physician agrees, contact local law enforcement to report a suspicion of human trafficking.
 - 3) **DO NOT** endanger yourself or the EMS crew by inciting a confrontation with other persons involved. If you feel threatened, leave the scene for a safe refuge and immediately contact law enforcement agency having jurisdiction.
5. If an EMS provider has reasonable cause to suspect that a person is a potential victim of human trafficking, report the concern:
 - 1) Report suspicious activity to local law enforcement or call 1-866-347-2423
 - 2) Call the National Human Trafficking Resource Center Hotline at 1-888-373-7888 (24 hours). The NHTRC call takers are trained to assist by discussing a case in a HIPAA compliant manner.
6. Document ¹

Notes:**1. Documentation considerations:**

- a. Document history – state only medically relevant facts. Keeping the history simple may prevent insignificant points from becoming a disputed fact in a legal case.
- b. Document physical findings exactly as they appear, but avoid making statements that cannot be attested to in a court of law (exact age of contusions, exact cause of injury, etc.)
- c. Document environmental and household findings exactly as they appear but avoid making generalizations and editorial comments (i.e. “numerous overfilled trash cans,” rather than “the house was a mess”).
- d. Document which authorities were contacted and when

Reference – Shandro J, Chisolm-Straker M, Duber HC, et. al. Human trafficking: a guide to identification and approach for the emergency physician. Ann Emerg Med. 2016;68:501-508.

Resource – Department of Homeland Security at www.dhs.gov/humantrafficking [Blue Campaign (<https://www.dhs.gov/bluecampaign>)]

**INDICATIONS FOR ALS USE
STATEWIDE BLS PROTOCOL****Criteria:**

- A. All patients.

Exclusion Criteria:

- A. None.

Procedure:**A. All patients: ¹**

1. A BLS/IALS service provider may request an ALS squad/ambulance when he/she thinks that a patient's needs exceed their capabilities. These conditions may include but are not limited to:
 - a. Altered level of consciousness.
 - b. Allergic reaction to medication or bites with difficulty breathing or swallowing, altered level of consciousness, or known previous reaction; hives within 5 minutes of exposure.
 - c. Cardiac symptoms.
 - d. Cardiac arrest.
 - e. Diabetic problem (not alert and/or abnormal breathing).
 - f. Multi-system trauma or severe single system trauma.
 - g. OB/Gyn (2nd or 3rd trimester bleeding or miscarriage).
 - h. Overdose/poisoning (associated with any other categories on this list).
 - i. Respiratory distress.
 - j. Respiratory arrest.
 - k. Seizures/convulsions.
 - l. Entrapment with injuries (unless obviously minor injuries).
 - m. Severe blood loss.
 - n. Shock (Hypoperfusion).
 - o. Stroke/CVA symptoms.
 - p. Syncope (fainting).
 - q. Unconsciousness.
 - r. Severe pain anywhere.
 - s. Agitated delirium – fighting against restraints without being aware of actions
 - t. A patient with vital signs outside of the normal range:
 - 1) Patient does not follow commands (motor GCS \leq 5).
 - 2) Systolic BP < 90.
 - 3) Pulse: <60 or >120 or irregular.
 - 4) Respirations: < 10 or >35 a minute or irregular.
 - 5) SpO₂ <95% after application of oxygen.
2. If transport by BLS ambulance to an appropriate receiving facility can be accomplished before ALS can initiate care, then the BLS agency should transport as soon as possible and should not request or should cancel ALS. For patients in cardiac arrest, protocols 331A and 331P should guide the appropriate time to initiate transport.
3. BLS ambulances should not delay patient care and transport while waiting for ALS providers. If ALS arrival at scene is not anticipated before initiation of transport, arrangements should be made to rendezvous with the ALS agency. ²

Notes:

1. BLS providers should initiate patient care and transport to the level of their ability following applicable BLS protocol(s).
 2. In the case of a long BLS/IALS transport time with a nearby ALS agency coming from the opposite direction, it may be appropriate to delay transport for a short period of time while awaiting the arrival of ALS if this delay will significantly decrease the time to ALS care for the patient. When BLS/IALS transport time to a receiving facility is relatively short, this delay is not appropriate.
-

Performance Parameters:

- A. Review outcome and care of patients with above conditions who were treated / transported by BLS only. Note that ALS care is not mandatory for these conditions in all cases.

VENTILATION VIA ENDOTRACHEAL TUBE OR ALTERNATIVE SUPRAGLOTTIC/RESCUE AIRWAY ASSISTING WITH ALS PROCEDURES – STATEWIDE BLS PROTOCOL**Criteria:**

- A. This protocol will be used to guide ventilation via endotracheal tube (ETT) or Extraglottic Supraglottic Advanced Airway by BLS/AEMT providers.

Exclusion Criteria:

- A. None

System Requirements:

- A. EMR/EMT should receive training before performing this skill.
- B. Ventilation via ETT or Extraglottic Supraglottic Advanced Airway must occur only when in direct presence of a responsible ALS/IALS provider who is on-scene functioning with an ALS/IALS agency. Ventilation by EMR/EMT via Extraglottic Supraglottic Advanced Airway must occur only in direct presence of an EMS provider at or above the level of AEMT.

Procedure:**A. All Patients: ¹**

1. Connect the bag-valve device to the ETT or to the proper port of the Alternative/ Rescue Supraglottic Airway and begin to ventilate:
 - a. Ventilate at adequate rate. **AVOID OVERZEALOUS HYPERVENTILATION!**
 - 1) Generally appropriate rates for ventilation when patient is not in cardiac arrest are: ²
 - a) Adults (≥15 y/o) 10 breaths / minute (every 5-6 seconds)
 - b) Children (1-14 y/o) 20 breaths / minute (every 3-5 seconds)
 - c) Infants < 1 y/o 25 breaths / minute (every 3-5 seconds)
 - d) An electronic rate timer should be used to attain proper ventilation rate.
 - 2) With guidance from ALS/IALS provider, alter these recommended ventilation rate with goal of maintaining ET_{CO}2 around 40 (range 35-45).
 - b. Ventilate with adequate volume. Provide steady squeeze of bag-valve device until chest rise is noted.
 - c. When available and appropriate for age, a carbon dioxide monitor should always be placed in-line between the tube and the ventilating device during patient ventilation.
2. Assure that the bag-valve device is connected to supplemental oxygen.
3. Assist the ALS/IALS provider in securing the tube to prevent movement.
 - a. This may be accomplished with the use of a commercial tube-holder, twill tape, or with the use of adhesive tape.
 - b. The ALS/IALS provider may request immobilization with a spine board and CID to minimize tube dislodgement from neck motion.
4. Notify the ALS/IALS provider immediately if:
 - a. The tube position is changed for any reason such as patient movement or movement of the ambulance.
 - b. There is any change in the ease of patient ventilation.
 - c. There is a reduction or increase in carbon dioxide reading on the CO₂ monitor.² production if CO₂ detector is used.²
 - d. The patient begins to breathe spontaneously.
5. If patient has a pulse, place pulse oximeter on patient and notify ALS/IALS provider immediately if SpO₂ decreases.
6. If available, monitor ventilatory rate on CO₂ monitor to assist with appropriate ventilation rate.

Notes:

1. Although an EMR/EMT/AEMT may assist with ventilation via an ETT or an EMR/EMT may assist with ventilation via Extraglottic Supraglottic Advanced Airway, continuous assurance of tube position and adequate ventilation is the responsibility of a higher-level ALS provider.
2. When available, a carbon dioxide (CO₂) detector must be attached between tube and bag-valve assembly. The EMT/AEMT should immediately notify the ALS provider if CO₂ detector monitor shows a decrease or absence of expired CO₂. Electronic CO₂ monitors are also helpful to assist in regulating rate of ventilation.

Performance Parameters:

- A. If available, capnograph report should be used to evaluate appropriate rate of ventilation (generally 8-12 breaths per minute for adults).
- B. Review all cases with inadvertent extubation or tube misplacement after initial intubation tube placement.

**PULSE OXIMETRY
STATEWIDE BLS PROTOCOL**

Criteria:

- A.** As part of the initial patient assessment for all providers at the EMT level and above.
- B.** Patient with shortness of breath or respiratory distress
- C.** Patient with chronic lung disease (COPD, emphysema) who are receiving oxygen therapy ¹
- D.** Any patient requiring oxygen therapy as determined by other appropriate Statewide BLS medical treatment protocols

Exclusion Criteria:

- A.** Patient with suspected carbon monoxide poisoning. These patients should all receive high-flow 100% oxygen without regard to pulse oximeter reading. ²

System Requirements:

- A.** [Optional] BLS QRS vehicles may carry a pulse oximeter for use by appropriately trained EMTs.
- B.** A pulse oximeter must be carried on every BLS, IALS, and ALS ambulance and squad vehicle and used by EMS providers at the level of EMT and above. EMS agencies and their medical directors must ensure that EMTs who have not been previously educated to use pulse oximeters are appropriately educated to the use of these devices.
- C.** Pulse oximetry is not in the scope of practice of EMR level providers. References to pulse oximetry within these Statewide BLS Protocols do not apply to EMRs.

Procedure:**A. All patients requiring oxygen therapy**

1. Initial Patient Contact – see Protocol #201.
2. Administer oxygen as determined by appropriate medical treatment protocol.
 - a. Providing oxygen therapy, patient extrication, and on-scene time should never be delayed while obtaining an O₂ saturation reading.
3. Monitor O₂ saturation (SpO₂) with pulse oximeter
 - a. Assure that reading is accurate. Patient's pulse should correlate with waves or pulsations on pulse oximeter.
 - b. Possible causes of inability to obtain as accurate SpO₂ reading include:
 - 1) Peripheral vasoconstriction (cold extremities, smoking, chronic hypoxia, or vascular obstruction/deficit).
 - 2) Severe anemia (low hemoglobin).
 - 3) Hypovolemia.
 - 4) Dirty Fingers or dark/metallic nail polish.
 - 5) Methemoglobinemia.
 - 6) Carbon monoxide – **Do not apply pulse oximeter to patient with suspected carbon monoxide poisoning.** ²
4. Use of SpO₂ reading to alter oxygen dosage:
 - a. The following patients should receive high-flow oxygen at all times when possible:
 - 1) Patients with symptoms or signs of severe respiratory distress (air hunger, cyanosis, chest wall/subcostal retractions, etc.)

- 2) Patients with suspected carbon monoxide poisoning.
 - 3) Patients with respiratory distress who are being prepared for air medical transport.
 - 4) **Head injured patients with altered level of consciousness (GCS 13 or lower).**
- b. Other patients (particularly patients with chronic lung disease or patients who do not tolerate an oxygen mask) may have oxygen mask replaced by nasal cannula or nasal cannula oxygen dose decreased if:
- 1) SpO₂ reading remains ≥ 95% on lower oxygen dose.
 - 2) Patient's color is good (not cyanotic).
 - 3) Patient's respiratory distress does not worsen.
5. Document initial SpO₂ reading after beginning oxygen therapy, and document SpO₂ reading after any changes in oxygen dose or type of delivery system/mask.
-

Notes:

1. Low oxygen in the blood (hypoxia) is sometimes needed as a stimulus to breathing in some patients with chronic lung diseases like COPD or emphysema. Pulse oximetry may be helpful in assuring that these patients are receiving adequate oxygen without suppressing their drive to breath with high-flow oxygen. **Note: Patients in significant respiratory distress should receive high-flow oxygen even if they have a history of chronic lung disease.**
 2. Pulse oximetry readings can be falsely high in carbon monoxide poisoning, and it would not be appropriate to decrease oxygen therapy based upon pulse oximetry. For this reason, pulse oximetry should not be used in these patients. **If agency has co-oximetry or exhaled breath carbon monoxide monitoring capabilities, refer to Optional Protocol 227.**
-

Performance Parameters:

- A. Monitor records for appropriate use of high-flow oxygen regardless of SpO₂ readings when appropriate.
- B. Monitor records for documentation of SpO₂ readings ≥ 95% for all patients who receive less than high-flow 100% oxygen when lower doses are permitted by appropriate protocol.

**CARBON MONOXIDE MONITORING
STATEWIDE BLS PROTOCOL [OPTIONAL]**

Criteria:

- A. Firefighter screening at fire scene
- B. Patient with symptoms consistent with carbon monoxide (CO) poisoning – altered mental status or headache

Exclusion Criteria:

- A. The use of pulse oximetry is covered in the Pulse Oximetry Protocol #226.

System Requirements:

- A. [Optional] BLS agencies may carry a CO monitor (co-oximetry or breath detector) for use by appropriately trained EMTs.
 - 1. These agencies must ensure that providers have received training and are competent in the use of the device.

Policy:**A. General noninvasive CO monitoring**

- 1. Noninvasive spectrophotometry can be used to measure the concentration of various physiologic components of blood. These include oxygen saturation, carbon dioxide, methemoglobin, and hemoglobin levels.
- 2. CO levels may also be estimated by devices that measure levels in exhaled breath.
- 3. The measurements obtained from these devices are similar to those from laboratory tests, but each measurement has a range of possible error. **The measurements obtained from these devices may raise an EMS providers awareness of a medical condition like carbon monoxide poisoning, but the measurements from these devices should NOT be used to change patient care when CO is suspected as the cause of a patient's symptoms.** Follow applicable protocols for appropriate treatment of medical conditions.
 - a. **When in doubt, treat the patient with high flow oxygen. The small harms from high flow oxygen are far outweighed by untreated CO poisoning.**

B. Firefighter, without symptoms, being screened for CO at fire scene

- 1. A physiologic/clinical CO monitor is a screening device and is not the sole determinant of CO risk.
 - a. **Normal levels on co-oximetry or exhaled breath testing DO NOT rule out CO poisoning and symptoms of low-level exposure are very vague and generalized.**
- 2. CO baseline levels are elevated in smokers.
 - a. **A level greater than 10% in a smoker is concerning for exposure and considered abnormal.**
 - b. **Any level above 5% in a non-smoker is concerning for exposure.**
 - c. **Levels concerning for exposure should be evaluated with a full patient assessment and further testing in an emergency department.**
- 3. CO physiologic/clinical monitors may be useful in screening firefighters for exposure to carbon monoxide at a fire scene.
 - a. **Anyone with a level over 12% should be treated immediately and assessed further in a hospital.**
- 4. In this setting, EMS providers shall follow the Fire Ground Rehabilitation Protocol (#150)

C. Patient (civilian or firefighter) with symptoms consistent with CO poisoning

1. CO-oximetry is a screening device and is not the sole determinant of CO risk. Patients with suspected CO poisoning should be treated using Poisoning/ Toxic Exposure Protocol #831.
2. Monitor level of CO with device.
 - a. Assure that reading is accurate. Patient's pulse should correlate with waves or pulsations if CO-oximeter is used.
 - b. Possible causes of inability to obtain an accurate CO reading include:
 - 1) For CO-oximeters:
 - a) Peripheral vasoconstriction (cold extremities, smoking, chronic hypoxia, or vascular obstruction/deficit). Severe anemia (low hemoglobin).
 - b) Hypovolemia.
 - c) Dirty fingers or dark/metallic nail polish.
 - 2) For breath devices: Inadequate exhaled tidal volume
3. **CO device reading may assist in confirming CO poisoning in symptomatic patients, but EMS providers must not alter oxygen administration or disposition based upon COHb level.**
 - a. Environmental CO detectors carried in "first-in" bags are more useful than physiologic/clinical CO meters in alerting EMS providers to an environment with elevated CO.
 - b. If patient has risk for CO poisoning and symptoms of CO poisoning, high-flow oxygen should be administered without regard to CO-oximeter reading.
 - c. After obtaining an initial CO measurement in a patient, repeated measurements are not necessary.
 - d. Diversion of a patient to a center capable of providing hyperbaric oxygen may only be done after contact with a medical command physician. The level of COHb is not a reason for diversion to hyperbaric therapy or for air medical transport.
4. Document initial COHb measurement on PCR.
5. If in doubt about COHb measurement or medical treatment suggested by appropriate protocols, then Contact Medical Command.

Performance Parameters:

- A. Monitor records for treatment of suspected carbon monoxide poisoning using appropriate protocols (e.g. Poisoning/ Toxin Exposure Protocol #831.)
- B. Monitor records for documentation of COHb measurements.

**GLUCOSE MEASUREMENT (GLUCOMETER)
STATEWIDE BLS PROTOCOL [OPTIONAL]****Criteria:**

- A. Patient with altered mental status
- B. Patient with symptoms of stroke

System Requirements:

- A. Glucose measurement by glucometer may only be performed by an EMT who has completed the DOH BLS Glucometer training and has been approved to measure glucose by glucometer by the EMS agency medical director.
- B. **[Optional]** BLS agencies may carry glucometer devices for use by appropriately trained and credentialed EMTs in the agency. NOTE: Although optional for BLS agencies, IALS and ALS agencies must carry glucometers for use by EMS providers at or above the level of AEMT.
 - 1. These agency's must assure that all EMTs using a glucometer have completed the DOH BLS Glucometer training and have been approved by the agency medical director.
 - 2. All medical devices must be used, maintained, and calibrated in accordance with the recommendations from the manufacturer.
 - 3. Electronic glucose testing meters may be carried (optional) by approved BLS agencies, and these agencies must have either a CLIA license or certificate of waiver. A BLS agency performing glucose testing with a meter cleared for home use by the FDA must hold a CLIA certificate of waiver. A CLIA certificate of waiver (CoW) is good for two years. Each agency is responsible for determining whether a CLIA license or waiver is required.
 - 4. These agencies must carry a glucometer that meets any other specifications required by the DOH.
 - 5. The EMS agency medical director must oversee the glucose monitor training, use of glucose monitor, and quality improvement audits.

Policy:**A. General glucometer use**

- 1. Assessing a patient's blood glucose may be helpful in patients with altered mental status or stroke symptoms. See BLS Altered Mental Status Protocol #702 and/or BLS Suspected Stroke Protocol #706 for specific use of glucometers.
- 2. Appropriately trained and credentialed EMTs should follow manufacturer's recommendations when using, calibrating, maintaining, and storing a glucose meter.
- 3. During glucose testing, EMTs must always use gloves and appropriate BSI. EMTs should use caution to avoid needlestick and exposure to blood.
- 4. Document any glucose measurement on PCR.
- 5. If in doubt about glucose measurement or medical treatment suggested by appropriate protocols, then Contact Medical Command.

Performance Parameters:

- A. Monitor records for treatment of altered mental status or suspected stroke (e.g. Statewide BLS Protocol #702 and #706).
- B. Monitor records for documentation of glucose measurements.

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12-LEAD ELECTROCARDIOGRAPHY STATEWIDE BLS PROTOCOL [OPTIONAL]

Criteria:

- A. Patient with chest pain of suspected cardiac origin (See Chest Pain Protocol #501)

System Requirements:

- A. Obtaining and transmitting a 12-Lead Electrocardiogram (ECG) may only be performed by an EMT who has completed a DOH approved BLS 12-Lead ECG training and has been approved to obtain and transmit a 12-Lead ECG by the EMS agency medical director.
- B. **[Optional]** BLS agencies may carry 12-Lead ECG devices for use by appropriately trained and credentialed EMTs in the agency. NOTE: Although optional for BLS agencies, IALS and ALS agencies must carry 12-Lead ECG devices for use by EMS providers at or above the level of AEMT.
 1. These agency's must assure that all EMTs obtaining a 12-Lead ECG have completed a DOH approved BLS 12-Lead ECG training and have been approved by the agency medical director.
 2. All medical devices must be used, maintained, and calibrated in accordance with the recommendations from the manufacturer.
 3. All BLS agencies that allow EMTs to obtain a 12-Lead ECG must also have the capability of transmitting all 12-Lead ECGs to a receiving facility that can provide an immediate interpretation of the ECG.
 4. These agency's must carry a 12-Lead ECG that meets any other specifications required by the DOH.
 5. The EMS agency medical director must oversee the 12-Lead ECG training, use and transmission of 12-Lead ECGs, and quality improvement audits.

Policy:

A. General 12-Lead ECG use

1. Obtaining and transmitting a 12-Lead ECG may be helpful in early recognition and destination selection in patients with an ST-elevation myocardial infarction (STEMI) when the BLS agency responds to areas where ALS response is prolonged and routinely arrives on scene a significant amount of time before ALS.
2. Appropriately trained and credentialed EMTs should follow manufacturer's recommendations when using, maintaining, and storing a 12-Lead ECG device and its batteries.
3. Document any 12-Lead ECGs obtained on the patient's PCR and include a copy of the 12-Lead ECG with the PCR stored by the agency.
4. 12-Lead ECGs should only be obtained by EMTs for indications listed in Statewide BLS Chest Pain Protocol #501.
5. Each 12-Lead ECG obtained must be transmitted as soon as possible after obtaining, and the receiving center must be contacted as soon as possible to interpret the transmitted ECG.

Performance Parameters:

- A. Monitor records for appropriately obtaining 12-Lead ECGs in patients with chest pain of suspected cardiac origin.
- B. Monitor records for documentation of obtaining 12-Lead ECG and for attached copies of every ECG.
- C. Monitor process of ECG transmission to ensure timely transmission and interpretation of the ECG.

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**ECG MONITOR PREPARATION ASSISTING WITH ALS PROCEDURES
STATEWIDE BLS PROTOCOL****Criteria:**

- A. This protocol will be used to guide ECG monitor preparation by BLS providers when an ALS/IALS provider has requested assistance with set-up of ECG monitor.
- B. ECG monitor set-up must occur only when in direct presence of responsible an ALS/IALS provider who is functioning on-scene with an ALS/IALS agency.
- C. BLS providers are not permitted to apply AED electrodes or other ECG monitors to non-cardiac arrest patients for the purpose of ECG monitoring unless in the direct presence of an ALS/IALS provider who is functioning on-scene with an ALS/IALS agency.

Exclusion Criteria:

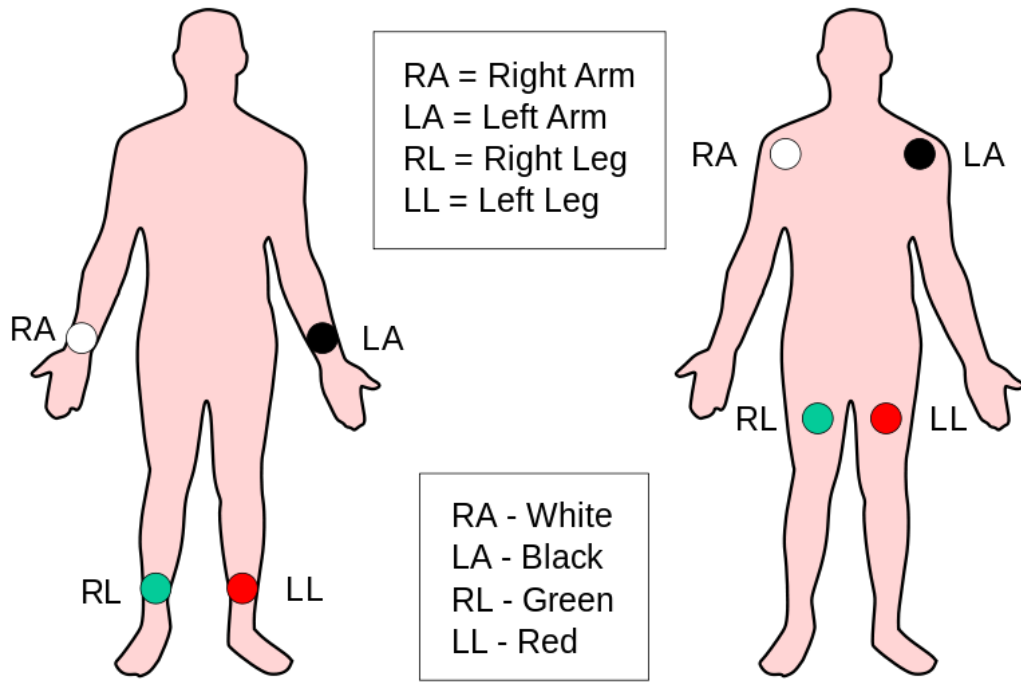
- A. This protocol does not apply to EMT's who have completed a DOH approved 12-Lead ECG training and have been approved to obtain a 12-Lead ECG by the EMS agency medical director.
- B. This protocol does not apply to the application of an AED to a pulseless and unresponsive patient.
- ~~C. BLS providers are not permitted to apply AED electrodes or other ECG monitors to non-cardiac arrest patients for the purpose of ECG monitoring unless in the direct presence of a responsible ALS provider who is functioning on-scene with an ALS agency.~~

System Requirements:

- A. EMT should receive training in this skill either as part of their EMT course curriculum or by successful completion of continuing education.

Procedure:**A. All Patients:**¹

1. Turn monitor power switch "On".
2. Connect electrode cable to monitor (may be pre-connected).
3. Connect an electrode to each snap on electrode cable.
4. Dry skin, if necessary, (in some cases, it may be necessary to shave a small patch of hair with a disposable shaver).
5. Apply electrodes to proper place on limbs or chest as shown below. If obtaining a 12-lead ECG is anticipated, electrodes should be applied to the limbs. Note that some ALS/IALS agencies may monitor additional leads or use different electrode lead colors.²



6. Record strip of ECG for approximately 12 seconds and provide to ALS provider for documentation.
-

Notes:

1. Although an EMT may assist with ECG monitoring, the ALS/**IALS** provider is responsible to assure that the monitor has been correctly set up and is responsible for all ECG interpretation.
2. If properly trained and directly supervised by an ALS/**IALS** provider who is functioning on-scene with an ALS/**IALS** agency, the BLS providers may connect electrodes to monitor a different lead or to obtain a 12-lead ECG.
3. The color and position of ground electrodes may vary, but the position of the red and white electrodes is standard

SPINAL CARE STATEWIDE BLS PROTOCOL

Criteria:

- A.** Excessive motion of the spine may worsen spine fractures or spinal cord injuries (especially in patients with altered consciousness who can't restrict their own spinal motion), but immobilization on a long spine board may also cause pain, agitation, respiratory compromise, and pressure ulcers. Patients with the following symptoms or mechanisms of injury **should be assessed to determine whether restriction of spinal motion is required:**

1. Symptoms of:

- a. Neck or back pain
- b. Extremity (upper or lower) weakness or numbness, even if symptoms have resolved.

OR

2. Mechanism of injury consistent with possible spinal injury, including:

- a. Any fall from standing or sitting with evidence of striking head.
- b. Any fall from a height (above ground level).
- c. Any MVC
- d. Any trauma where victim was thrown (e.g. pedestrian accident or explosion).
- e. Any lightning or high voltage electrical injury.
- f. Any injury sustained while swimming/ diving or near drowning where diving may have been involved.

OR

3. Any unknown or possible mechanism of injury when the history from patient or bystanders does not exclude the possibility of a spine injury.¹

- B.** This protocol also applies to assessment of patients before inter-facility transfer for injuries from a traumatic mechanism unless a medical command physician agrees that the patient may be transported without restriction of spinal motion.

Exclusion Criteria:

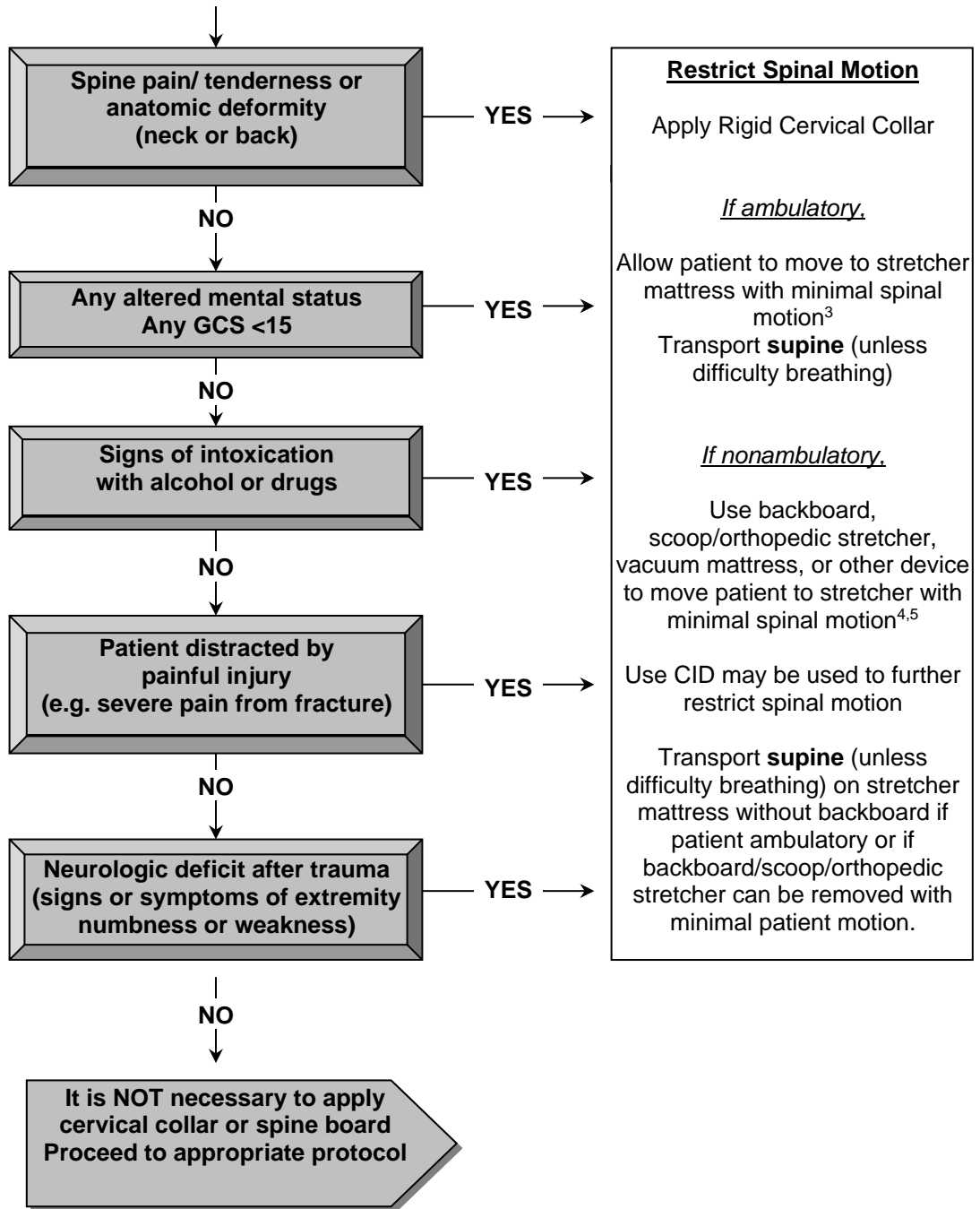
- A.** No history or no mechanism of injury that would be consistent with spinal injury.
- B. Patients with penetrating trauma to the chest, abdomen, head, neck, or back.** These patients may be harmed by immobilization on a spine board.
- C.** Patients with gunshot wounds to the head do not require immobilization on a spine board.
- D.** Patients with non-traumatic back or neck pain related to movement, position or heavy lifting.¹

Procedure:

A. All patients:

Initial Patient Contact - Protocol #201
Mechanism or signs of blunt trauma

If altered mental status,
Manually restrict spinal motion²



WARNING: These criteria cannot be assessed on any patient with a language or communication barrier (including infant/toddler/preschool patients) that prevents understanding and appropriately responding to the assessment questions. If there is any doubt about whether the patient meets any of the clinical criteria listed above, restrict spinal motion.

Notes:

1. Beware - minimal trauma may lead to spinal fractures in patients with advanced age and ground level fall and also in patients with history of Rheumatoid Arthritis, severe osteoarthritis, Down's Syndrome, cancer, or ankylosing spondylitis. If these patients meet the spinal precautions criteria in this protocol then restrict spinal motion even if their mechanism was relatively minor (e.g. minor fall).
2. Maintain patent airway during manual C-spine stabilization. Use jaw-trust if needed. Consider nasopharyngeal or oropharyngeal airway if decreased LOC and no gag reflex.
3. There is no evidence for the "standing backboard" technique of strapping an ambulatory patient to a backboard while standing. Ambulatory patients should be eased to a seated position on the stretcher mattress without backboard, then laid back gently while restricting excessive spinal motion.
4. Use care with patients that have severe kyphosis or other spine abnormalities. Use appropriate padding or alternatives to spine board to avoid uncomfortable position for the patient.
5. If the patient is in a seated position, a short spine board or similar device may be used to immobilize the spine during transfer to the stretcher.

Performance Parameters:

- A. Review all cases of trauma patients that did not receive spinal motion restriction precautions for documentation of appropriate assessment of all five clinical criteria listed in the protocol.

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**DEAD ON ARRIVAL (DOA)
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Patient presenting with the following
 1. Decomposition
 2. Rigor mortis (Caution: do not confuse with stiffness due to cold environment)
 3. Dependent lividity
 4. Decapitation
 5. Unwitnessed cardiac arrest of traumatic cause
 6. Traumatic cardiac arrest in entrapped patient with severe injury that is not compatible with life.
 7. Incineration
 8. Submersion greater than 1 hour
- B. In cases of mass casualty incidents where the number of seriously injured patients exceeds the providers and resources to care for them, any patient who is apneic and pulseless may be triaged as DOA.¹

Exclusion Criteria:

- A. Obviously pregnant patient with cardiac arrest after trauma, if cardiac arrest was witnessed by EMS providers. These patients should receive resuscitation and immediate transport to the closest receiving facility. See Trauma Patient Destination Protocol # 180.
- B. Hypothermia. These patients may be apneic, pulseless, and stiff. Resuscitation should be attempted in hypothermia cases unless body temperature is the same as the surrounding temperature and other signs of death are present (decomposition, lividity, etc...). See hypothermia protocol #681.

Treatment:

- A. **All patients:**
 1. Initial Patient Contact – see Protocol # 201.
 2. Verify pulseless and apneic.
 3. Verify patient meets DOA criteria listed above.
 - a. **If any doubt exists, initiate resuscitation and follow Cardiac Arrest Protocol # 331 and consider medical command contact.**
 - b. If patient meets DOA criteria listed above, ALS should be cancelled.
 4. If the scene is a suspected crime scene, see Crime Scene Preservation Guidelines #919.
 5. In all cases where death has been determined, notify the Coroner or Medical Examiner's office or investigating agency. Follow the direction of the Coroner or Medical Examiner's office/investigating agency regarding custody of the body.

Possible Medical Command Orders:

- A. If CPR was initiated, but the medical command physician is convinced that the efforts will be futile, MC physician may order termination of the resuscitation efforts.

Note:

1. In the case of multiple patients from lightning strike, reverse triage applies, and available resources should be committed to treating the patients with no signs of life unless they meet the other criteria listed above.

Performance Parameters:

- A. Review all cases for documentation of DOA criteria listed above.

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**OUT-OF-HOSPITAL DO NOT RESUSCITATE
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Patient displaying an Out-of-Hospital Do Not Resuscitate (OOH-DNR) original order, bracelet, or necklace who is in cardiac or respiratory arrest.¹

Exclusion Criteria:

- A. Patient does not display, and patient surrogate does not produce, an OOH-DNR original order, bracelet, or necklace.
- B. An OOH-DNR order may be revoked by a patient or their surrogate at any time. If the patient or surrogate communicates to an EMS provider their intent to revoke the order, the EMS provider shall provide CPR if the individual is in cardiac or respiratory arrest.
- C. Advance directives, living wills, POLST, and other DNR forms that are not valid Pennsylvania Department of Health OOH-DNR orders may not be followed by EMS providers unless validated by a medical command physician. When presented with these documents, including a POLST, CPR / resuscitation should be initiated, and medical command should be contacted as soon as possible.²
- D. Patient is not in cardiac or respiratory arrest.

Treatment:**A. All patients in cardiac or respiratory arrest:³**

1. Follow Scene Safety protocol #102 and BSI precautions.
2. Verify the presence of a valid PA DOH OOH-DNR original order, bracelet, or necklace.
 - a. Treatment shall not be delayed while verifying the presence of a valid PA DOH OOH-DNR original order, bracelet or necklace, advance directives, living wills, POLST and other DNR forms.
 - b. If there is any question of whether the OOH-DNR order is valid, the patient or their surrogate has revoked the order, or whether the patient is pregnant⁴, the EMS provider shall:
 - 1) Initiate resuscitation using appropriate protocol(s), and
 - 2) Contact medical command as soon as possible
3. Verify pulselessness or apnea.
4. If a bystander has already initiated CPR:
 - a. Assist with CPR and contact medical command immediately.
5. If CPR has not been initiated before the arrival of EMS providers:
 - a. The OOH-DNR shall be honored, and CPR shall be withheld or discontinued.
 - b. Contact the local coroner or medical examiner.

Possible Medical Command Orders:

- A. The medical command physician may order termination of resuscitation efforts if CPR was not initiated by EMS providers.

Note:

1. EMS providers shall follow this protocol and, when appropriate, shall honor an OOH-DNR within a hospital.
2. The Pennsylvania Orders for Life Sustaining Treatment (POLST) form is a specific type of a more general POLST (Physician Orders for Life Sustaining Treatment) form that has been standardized and contains the Pennsylvania Department of Health logo. If presented with a PaDOH version of the POLST, the standardized form should simplify any discussion related to termination of resuscitation efforts with a medical command physician.
3. An OOH-DNR order, bracelet or necklace is of no consequence unless the patient is in cardiac or respiratory arrest, if vital signs are present, the EMS provider shall provide medical interventions necessary and appropriate to provide comfort to the patient and alleviate pain unless otherwise directed by the patient or a medical command physician. Follow appropriate treatment protocols.
4. For pregnant patients, the EMS provider shall examine the original signed OOH-DNR to ensure completion of Section 2B "Physicians for Pregnant Patients Only" by the patient's attending physician in order to honor the OOH-DNR and withhold or discontinue CPR.

Performance Parameters:

- A.** Review all cases for documentation of presence of a PA DOH recognized OOH-DNR order, bracelet, or necklace.

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**GENERAL CARDIAC ARREST – ADULT
STATEWIDE BLS PROTOCOL**

Initial Patient Contact - See Protocol # 201
Patient pulseless, may have gasping/agonal breathing

**Cardiac arrest witnessed by EMS personnel
OR
Quality CPR in progress on EMS arrival**

NO

YES

**DURING
UNINTERRUPTED
COMPRESSIONS:**

Airway Options:⁶
Naso/oropharyngeal
Airway

Ventilation Options:⁶
No Ventilation
or
1 ventilation every 10
compressions (10
breaths/min, ideally
aided by rate timer)

If available, use
metronome, rate
timers, or feedback
devices to guide
compression and
ventilation rates

Oxygen Options:⁶
Via NRB
or
Via BVM

Give Compressions
while AED is charging

No mechanical CPR
device during initial 10
minutes¹

←-----→ Uninterrupted
Chest Compressions until
AED ready^{1,2,3}

Analyze with AED
Shock (360 joules^{4,5}) if indicated

←-----→ 200 Uninterrupted
Chest Compressions^{1,2,3} -----→

Analyze with AED
Shock (360 joules^{4,5}) if indicated

←-----→ 200 Uninterrupted
Chest Compressions^{1,2,3} -----→

Analyze with AED
Shock (360 joules^{4,5}) if indicated

←-----→ 200 Uninterrupted
Chest Compressions^{1,2,3} -----→

Analyze with AED
Shock (360 joules^{4,5}) if indicated

Continue cycles of 200
compressions followed by AED
analysis/shock^{1,4}
BVM: 1 ventilation/ 10-15
compressions
May use mechanical CPR
device (optional)

**Return of
Pulse**
**Assess Vital
Signs**
**Provide
Oxygen and
Ventilate as
needed
(Goal= SpO2
95-99%)**
**Place in
Recovery
Position**
**Transport
ASAP**

**DO NOT INTERRUPT CPR TO
PACKAGE AND
TRANSPORT.
CONSIDER AWAITING
ARRIVAL OF ALS if ALS ETA
< 20 mins.^{7,8}
OR**

**Contact Medical
Command
for possible
field termination
of CPR⁹**

**GENERAL CARDIAC ARREST – ADULT
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Adult patient (>14 years old) with cardiac arrest (may have gasping or agonal breathing).

Exclusion Criteria:

- A. If patient meets criteria for DOA (e.g. decapitation, decomposition, rigor mortis in warm environment, etc...) then follow DOA protocol # 322.
- B. Cardiac arrest due to acute traumatic injury – see Cardiac Arrest - Traumatic Protocol #332. AED use is not indicated in traumatic cardiac arrest, but this protocol should be followed if there is the possibility of a medical condition causing cardiac arrest prior to a traumatic incident.
- C. Patient displaying an Out-of-Hospital Do Not Resuscitate (OOH-DNR) original order, bracelet, or necklace - see OOH-DNR Protocol #324.

System Requirements:

- A. Ideally, providers in each EMS agency will use a “pit crew” approach when using this protocol to ensure the most effective and efficient cardiac arrest care. Training should include teamwork simulations integrating QRS, BLS, and ALS crew members who regularly work together. High-performance systems should practice teamwork using “pit crew” techniques with predefined roles and crew resource management principles. For example:
1. Rescuer 1 and 2 set up on opposite sides of patient’s chest and perform continuous chest compressions, alternating after every 100 compressions to avoid fatigue.
 2. Use metronome or CPR feedback device to ensure that compression rate is 100-120/ minute.
 3. Chest compressions are only interrupted during rhythm check (AED analysis or manual) and defibrillation shocks. Continue compressions when AED/ defibrillator is charging.
 4. During the first four cycles of compressions/defibrillation (approximately 10 minutes) do not apply or use mechanical CPR device.
 5. Use of a CPR checklist to ensure that all best practices are followed during CPR.
- B. For efficient “pit crew” style care, the EMS agency medical director should establish whether any ventilation is given during initial compression cycles. If BVM ventilation is used, compressions should not be interrupted when giving a ventilation every 10 compressions.
- C. The EMS agency, overseen by the agency medical director, must perform a QI review of care and outcome for every patient that receives CPR.
1. The QI should be coordinated with involved ALS agency and receiving hospital to include hospital admission, discharge, and condition information. This EMS agency QI can be accomplished by participation in the Cardiac Arrest Registry for Enhanced Survival (CARES) program through the ALS agency.
 2. The QI should be coordinated with local PSAP/dispatch centers to review opportunities to assure optimal recognition of possible cardiac arrest cases and provision of dispatch-assisted CPR (including hands-only CPR when appropriate).

Notes:

1. Excellent CPR is a priority:
 - a. Push hard (at least 2 inches deep) and fast (100-120/min) and allow full recoil of chest during compressions.
 - b. Change rescuer doing compressions every 1-2 minutes (100-200 compressions) to avoid fatigue

- c. Restart CPR immediately after any defibrillation attempts.
 - d. Keep pauses in CPR to a minimum. Immediately after AED recommends shock resume compressions until AED is fully charged, then immediately after shock, resume compressions without checking pulse or rhythm. Avoid pauses in CPR during airway management.
 - e. CPR sequence is CAB (Compressions, Airway, Ventilation) for all ages, except the ABC sequence should be used in drowning.
 - f. For pregnant patients, a rescuer should manually displace the uterus to the patient's left during CPR.
 - g. Mechanical CPR devices may be utilized when there is low manpower or transport of the patient is expected.
2. Do not move or package patient for transport at this time. Chest compressions are much less effective during patient transportation/movement, and any possible interventions ~~by medical command~~ will be less effective without optimal CPR.
 3. If the patient is pregnant at over 20 weeks estimated gestational age (EGA) or if fundus is palpable above the patient's naval, then apply the following additional interventions:
 - a. During CPR, have an additional rescuer apply leftward lateral displacement of the uterus to remove uterine pressure on inferior vena cava and to enhance venous return.
 - b. Use the same defibrillation doses and indications as for any non-pregnant patient.
 - c. Contact medical command as soon as possible during CPR to in case perimortem Cesarean Section (PMCS) can be done at a receiving facility. Previous studies show that PMCS is most successful if done within 5 minutes of maternal cardiac arrest.
 4. ~~Shock at maximum output of defibrillator, up to maximum of 360 joules, for initial and subsequent defibrillation attempts.~~
 5. Patient with severe hypothermia (if available, core temperature < 90° F or 32° C) see Hypothermic Protocol # 681. For hypothermic patients, no more than 1 shock should be delivered. Further action will be directed by medical command. Begin transport immediately after initial countershock. Transport to center with capability of cardiopulmonary bypass surgery if possible.
 6. The optimal airway management/ventilation during initial cycles of uninterrupted compressions has not been established. Agency medical director can set agency policy using the following approaches:
 - a. Open airway with manual technique or naso/oropharyngeal airway – with or without passive oxygen
 - b. Provide either no active ventilation (passive ventilation from compressions) or bag ventilate (one ventilation every 10 compressions) without interrupting compressions
 - c. If BVM ventilation, consider 2-thumbs-up 2-person BVM technique
 7. If the AED continues to indicate that shocks are advised, it is best to focus on excellent chest compressions and use AED to reanalyze every 2 minutes until ALS arrives. Packaging or moving the patient at this point will decrease the effectiveness of CPR. After three AED messages of "no shock advised", contact medical command. If unable to contact medical command, transport patient as soon as possible while continuing CPR.
 8. During packaging and transport, minimize interruptions of CPR and reanalyze rhythm about every 10 minutes, and deliver additional shocks if advised.
 - a. The vehicle and all patient movement should stop before reanalyzing the rhythm.
 - b. Providers must be familiar with the AED used by their agency. AEDs that automatically analyze every 2 minutes should be temporarily disabled during patient movement and transport, since the motion of transport may lead to inappropriate shocks. In many machines, this can be

- accomplished by disconnecting the electrodes from the machine. Avoid turning the AED off, since this may reset all of the data collection within the device.
- c. Transport without lights or siren to minimize chance of injury to EMS personnel providing CPR and patient care, unless unusual circumstances exist.
9. ~~AHA Guidelines suggest that the following are reliable and valid criteria for BLS termination of resuscitation.~~ Before moving the patient to the ambulance, consider contact with medical command for orders to terminate CPR in the field if ALL of the following apply:
- a. Arrest not witnessed by EMS personnel, AND
 - b. No return of spontaneous circulation/ pulse (prior to transport), AND
 - c. No AED shock was delivered (prior to transport).

Performance Parameters:

- A. EMS agency should document patient outcome and QI indicators for cardiac arrest, including ROSC during EMS care, ROSC on arrival to ED, admitted to hospital, discharged from hospital alive, and neurologic function on discharge.
- B. Review of number of cardiac arrest patients that received bystander CPR. [Benchmark may be set with the goal of increasing community CPR classes to improve this percentage.]
- C. System review of time from dispatch to arrival on scene of initial responder with access to AED. [Possible benchmark of response of 5 minutes or less to 90% of cardiac arrests.]
- D. Review for cases where patient was inappropriately moved before arrival of ALS. Moving patients with CPR before ROSC is associated with decreased survival.

GENERAL CARDIAC ARREST – PEDIATRIC STATEWIDE BLS PROTOCOL

Initial Patient Contact - See Protocol # 201
Patient pulseless, may have gasping/agonal breathing
Call for ALS if not already dispatched
Assess patient age

Infant < 1 year of age

CPR ^{1,2,3}
15:2 (Infant)

TRANSPORT ⁸ ASAP

**Child between 1-14 years old
Cardiac arrest witnessed by EMS personnel
OR
Quality CPR in progress on EMS arrival**

NO

YES ²

PAUSE FOR VENTILATIONS, BUT MINIMIZE ALL OTHER INTERRUPTIONS IN COMPRESSIONS

Give Compressions while AED is charging

Naso/oropharyngeal Airway

Supplemental Oxygen

Mechanical CPR should not be used for pediatric patients

CPR 15:2 ^{1,2}
10 cycles/ 2 minutes or until AED ready

Analyze with AED^{3,4}
Shock (360 joules^{5,6,7}) if indicated

CPR 15:2 ^{1,2}
10 cycles or 2 minutes

Analyze with AED^{3,4}
Shock (360 joules^{5,6,7}) if indicated

CPR 15:2 ^{1,2}
10 cycles or 2 minutes

Analyze with AED^{3,4}
Shock (360 joules^{5,6,7}) if indicated

CPR 15:2 ^{1,2}
10 cycles or 2 minutes

Analyze with AED^{3,4}
Shock (360 joules^{5,6,7}) if indicated

Continue cycles CPR 15:2 followed by AED analysis/shock every 2 minutes

Return of Pulse

Assess Vital Signs

Provide Oxygen and Ventilate as needed (Goal= SpO2 95-99%, if available)

Place in Recovery Position

Transport ASAP

DO NOT INTERRUPT CPR TO PACKAGE AND TRANSPORT. CONSIDER AWAITING ARRIVAL OF ALS if ALS ETA < 20 mins^{7,8,9}
OR

Contact Medical Command for possible field termination of CPR¹⁰

**GENERAL CARDIAC ARREST – PEDIATRIC
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Pediatric patient (≤ 14 years old) with cardiac arrest (may have gasping or agonal breathing).

Exclusion Criteria:

- A. If patient meets criteria for DOA (e.g. decapitation, decomposition, rigor mortis in warm environment, etc...) then follow DOA protocol # 322.
- B. Cardiac arrest due to acute traumatic injury – see Cardiac Arrest - Traumatic Protocol #332. AED use is not indicated in traumatic cardiac arrest, but this protocol should be followed if there is the possibility of a medical condition causing cardiac arrest prior to a traumatic incident.
- C. Cardiac arrest in newborn – see Newborn / Neonatal Resuscitation Protocol # 333.
- D. Patient displaying an Out-of-Hospital Do Not Resuscitate (OOH-DNR) original order, bracelet, or necklace - see OOH-DNR Protocol #324.

Possible Medical Command Orders:

- A. After 4 “no shock advised messages, if ETA to hospital or ETA of ALS are > 15 minutes, medical command may order termination of resuscitation efforts.

Notes:

- Ventilations should be given over 1 second. When giving chest compressions:
 - Push hard (at least 1/3 AP chest diameter for children and infants)
 - Push fast (100-120 compressions/min)
 - Release hand pressure completely after each compression.
 - To avoid tiring, rescuer doing chest compressions should be replaced at least every 5 cycles or 2 minutes.
 - It is essential to minimize interruptions in chest compressions during CPR.**
 - CPR sequence is CAB (Compressions, Airway, Ventilation) for all ages, except the ABC sequence should be used in drowning.
 - Compression to ventilation ratio is 30:2 for all single rescuers, but 15:2 for children and infants when 2 rescuers are available.
- Ventilate the patient with appropriate oral/nasopharyngeal airway using high flow oxygen, as soon as possible, but **Do Not** delay CPR to connect oxygen. Ideal ventilation includes two-person technique. Routine cricoid pressure is not recommended during CPR.
 - Before intubation**, compression to ventilation ratio is: Child and Infant = 15:2. (**NOTE:** 1-rescuer CPR compression to ventilation ratio is 30:2 for all patients except newborns)
 - After intubation/ Alternative/ Rescue Airway, avoid overzealous hyperventilation.**

After an advanced airway is in place, chest compressions should be given by one rescuer at a rate of 100-120 compressions/ minute without pauses while a second rescuer provides continuous ventilations at a rate of 10 breaths/ minute for all patient ages. Suggest using an electronic rate timer or provide 1 breath every 10 compressions.
 - If unable to ventilate, proceed to Obstructed Airway maneuvers.
- Pediatric AED Use:** If pediatric AED electrodes are immediately available, follow protocol flowchart for adult patients but use pediatric AED electrodes if patient is < 8 years old. If no pediatric AED electrodes are available, adult AED/electrodes should be used on patients < 8 year old, including infants. Check pulse only after the AED gives a “no shock indicated” message. After each shock is delivered, start CPR immediately without checking the pulse.
- Pediatric AED Use:** If available, children younger than 8 years old should have pediatric AED pads attached and used, however, if pediatric pads cannot be located or used, adult AED pads should be used.

5. If no shock is indicated, check pulse, if pulseless repeat 5 cycles of CPR and then re-analyze (if applicable). After three sequential “no shock indicated” messages, repeat “analyze” period every 10 minutes. (Note: some AEDs automatically re-analyze for you.)
6. If available, pediatric AED pads used on patients < 8 years of age will provide appropriate lower shock energy dose.
7. Patient with severe hypothermia (if available, core temperature < 90° F or 32° C) see Hypothermic Protocol # 681. For hypothermic patients, no more than 1 shock should be delivered. Further action will be directed by medical command. Begin transport immediately after initial countershock. Transport to center with capability of cardiopulmonary bypass surgery if possible.
8. If the AED continues to indicate that shocks are advised, it is best to focus on excellent chest compressions and use AED to reanalyze every 2 minutes until ALS arrives. Packaging or moving the patient at this point will decrease the effectiveness of CPR. After three AED messages of “no shock advised”, contact medical command. If unable to contact medical command, transport patient as soon as possible while continuing CPR.
9. During packaging and transport, minimize interruptions of CPR and reanalyze rhythm about every 10 minutes, and deliver additional shocks if advised.
 - a. The vehicle and all patient movement should stop before reanalyzing the rhythm.
 - b. Providers must be familiar with the AED used by their agency. AEDs that automatically analyze every 2 minutes should be temporarily disabled during patient movement and transport, since the motion of transport may lead to inappropriate shocks. In many machines, this can be accomplished by disconnecting the electrodes from the machine. Avoid turning the AED off, since this may reset all of the data collection within the device.
 - c. Transport without lights or siren to minimize chance of injury to EMS personnel providing CPR and patient care, unless unusual circumstances exist.
10. Agency medical director may establish policy for immediate transport if local pediatric receiving center in close proximity has capabilities for extracorporeal membrane oxygenation (ECMO) and mutually agree on appropriate criteria for rapid transport for immediate ECMO.
11. AHA Guidelines suggest that the following are reliable and valid criteria for BLS termination of resuscitation. Before moving the patient to the ambulance, consider contact with medical command for orders to terminate CPR in the field if ALL of the following apply:
 - a. Arrest not witnessed by EMS personnel, AND
 - b. No return of spontaneous circulation/ pulse (prior to transport), AND
 - c. No AED shock was delivered (prior to transport).

Performance Parameters:

- A. EMS agency should document patient outcome and QI indicators for cardiac arrest, including ROSC during EMS care, ROSC on arrival to ED, admitted to hospital, discharged from hospital alive, and neurologic function on discharge.
- B. Review of number of cardiac arrest patients that received bystander CPR. [Benchmark may be set with the goal of increasing community CPR classes to improve this percentage.]
- C. System review of time from dispatch to arrival on scene of initial responder with access to AED. [Possible benchmark of response of 5 minutes or less to 90% of cardiac arrests.]

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**CARDIAC ARREST – TRAUMATIC
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Patient unresponsive, pulseless, and apneic/agonal breaths when acute traumatic injury is the cause of the cardiac arrest.

Exclusion Criteria:

- A. If patient meets criteria for DOA (e.g. decapitation, decomposition, rigor mortis in warm environment, etc...) then follow DOA protocol # 322.
- B. Patients in cardiac arrest due to overdose, hypothermia, cardiac disease, or other medical conditions when traumatic injuries are not suspected to be the primary reason for cardiac arrest – see Cardiac Arrest protocol # 331.

Treatment:**A. Patients in cardiac arrest due to trauma:**

1. Initial Patient Contact – see protocol #201.
 - a. If any doubt exists that the apparent injuries are responsible for the cardiac arrest, follow Cardiac Arrest Protocol #331, including the use of AED when indicated. Otherwise, AED use is not indicated in cardiac arrest from severe traumatic injuries.
 - b. If cardiac arrest is witnessed by EMS providers, or there is evidence that the patient had any signs of life within a few minutes before the arrival of EMS providers, proceed to step 2 below.^{1,2} Otherwise, follow DOA protocol # 322.
2. Initiate CPR with cervical spine motion restriction, if indicated.
3. Additional treatments prior to transport should be limited to:
 - a. Rapid extrication with spinal motion restriction, if indicated.
 - b. Assure adequate airway and adequate ventilation.³
4. Transport immediately if patient can arrive at a trauma center (preferred destination) or the closest hospital in ≤ 15 minutes.⁴
 - a. Notify the receiving facility ASAP to allow maximum time for preparation to receive the patient.
 - b. Contact medical command for possible field termination of resuscitation if the patient remains in cardiac arrest after initial resuscitation attempt and cannot arrive at the closest receiving facility within 15 minutes.
 - c. Air medical transport of patients in traumatic cardiac arrest is generally not indicated.

Notes:

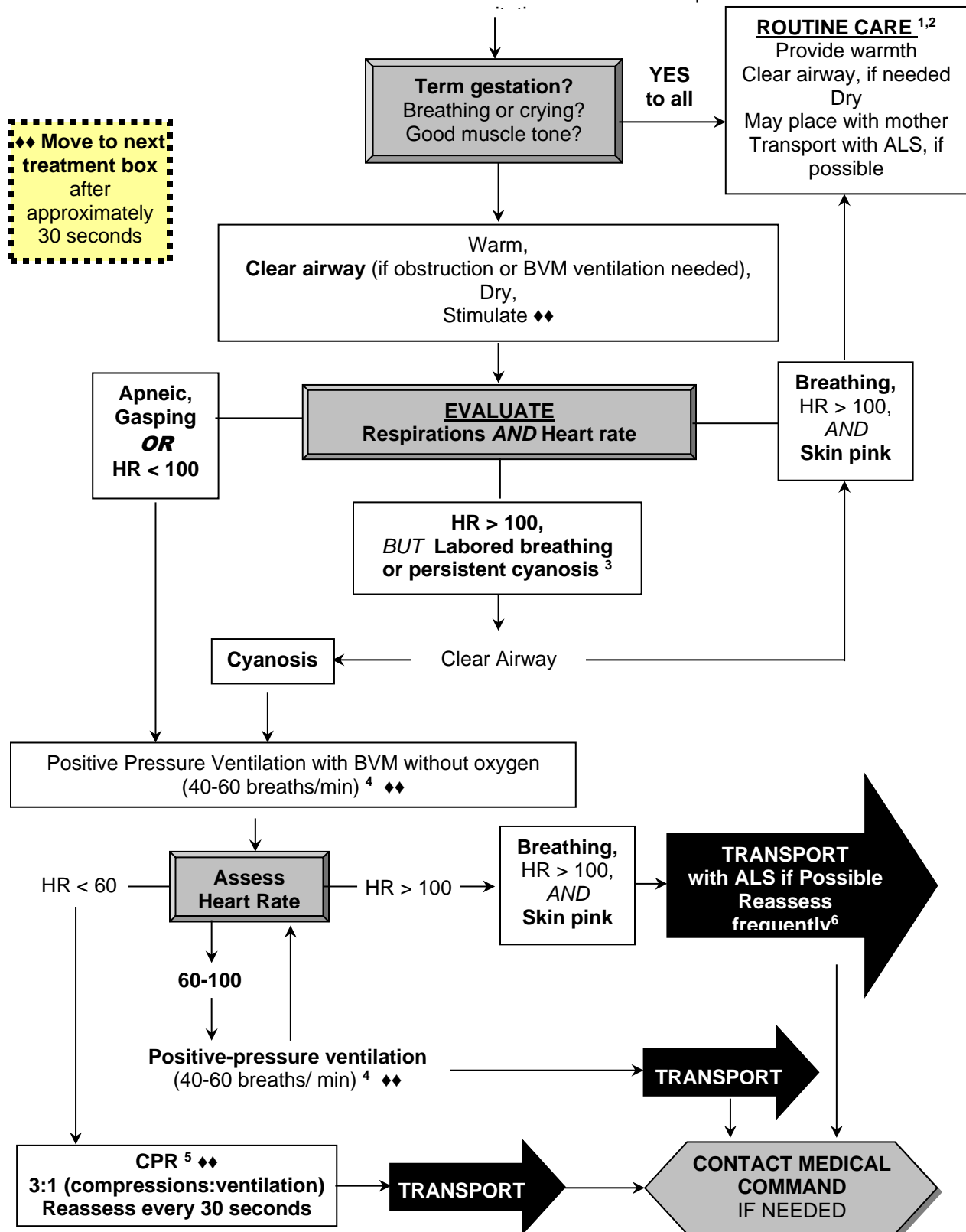
1. If bystanders have initiated resuscitation, EMS providers should continue CPR and contact medical command to consider terminating resuscitation.
2. To have any chance of survival, victims of traumatic cardiac arrest must arrive at a hospital within a few minutes.
3. If ALS is immediately available, endotracheal intubation or decompression of a tension pneumothorax may increase this very short time window for survival, but rapid extrication and transport should not be delayed if ALS is not on scene.
4. If the patient can arrive at the closest trauma center within 15 minutes, the patient should be taken to the trauma center even if another hospital is closer.

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NEWBORN RESUSCITATION STATEWIDE BLS PROTOCOL

BIRTH ¹

Initial Patient Contact – See Protocol #201
Consider call for ALS if not already dispatched
Consider call for second ambulance if newborn requires



**NEWBORN RESUSCITATION
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Newborn infant

Exclusion Criteria:

- A. Resuscitation may not be appropriate in rare cases where gestational age (confirmed gestational age <23 weeks) or fatal birth defects (for example anencephaly or absence of skull bones and brain hemispheres) are consistent associated with certain early death.

Treatment:**A. All Patients**

1. Refer to accompanying flowchart.
-

Note:

1. The newborn should be evaluated immediately after birth and reevaluated for respiratory effort, heart rate, and color every 30 seconds during the initial care until it is clear that the newborn is stable.
2. Transport the stable infant in a warm environment and in accordance with Protocol 124, Safe Transportation of Children in Ground Ambulances. within an infant car seat (if available) that has been firmly secured within the ambulance.
3. Examine for central cyanosis at the face, trunk and mucous membranes. Acrocyanosis of hands and feet only is usually a normal finding if the infant is vigorous, breathing, and heart rate >100.
4. Positive pressure ventilation should use the minimum volume and pressure to achieve chest rise and /or achieve or maintain HR>100.
5. Two thumb-encircling chest technique is preferred. Compressions and ventilations should occur in a 3:1 ratio and should be done quickly enough to provide approximately 90 compressions and 30 ventilations per minute.
6. Newborns who required resuscitation are at risk for deterioration and should be transported in the environment that permits frequent reassessment. Transport under the care of an ALS provider is ideal if available.

**ALLERGIC REACTION / ANAPHYLAXIS
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Severe Allergic Reaction:** A patient with the following symptoms of severe allergic reaction or anaphylaxis after suspected exposure to an allergen:
1. Symptoms of severe allergic reaction include:
 - a. Difficulty breathing and wheezing.
 - b. Swollen tongue and lips or difficulty swallowing.
 - c. Hypotension.
 2. Common allergens that may lead to allergic reactions include
 - a. Bee/ Wasp/ Hornet stings
 - b. Medications (e.g. antibiotics)
 - c. Foods (e.g. peanuts, seafood)
- B. Moderate Allergic Reaction:** A patient with a moderate allergic reaction may have:
1. Mild shortness of breath with wheezing
 2. Extensive hives and itching
 3. Mild tongue/ lip swelling without difficulty swallowing of shortness of breath.

Exclusion Criteria:

- A. Mild allergic reaction** isolated to minor hives without any of the criteria listed above.¹

System Requirements:

- A.** ~~Only an EMT that has completed the EPINEPHrine patient-assisted auto-injector module through the EMT curriculum or continuing education may administer patient-assisted EPINEPHrine by auto-injector.~~
- B. [Optional]** BLS agencies may carry EPINEPHrine auto-injectors for administration by the agency's EMTs.
1. These agencies must comply with Department of Health EPINEPHrine "check and inject" requirements, including the training of agency providers before the agency is permitted to stock and carry EPINEPHrine auto-injectors.
 2. These agency's must carry, at a minimum, 1 adult (0.3 mg) and 1 pediatric (0.15 mg) dose EPINEPHrine auto-injectors in their primary responding vehicle, stored and maintained in a manner consistent with Department requirements.
- C. [Optional]** BLS agencies may carry EPINEPHrine in 1mg/mL vials for administration by the agency's EMTs.
1. These agencies must comply with Department of Health EPINEPHrine "check and inject" requirements, including the training of agency providers before the agency is permitted to stock and carry EPINEPHrine 1mg/mL for injection.
 2. These agencies must carry, at a minimum, and in a specially marked kit/case in their primary responding vehicle, stored and maintained in a manner consistent with Department requirements.
 - a. Two (2) vials of EPINEPHrine 1mg/mL
 - b. Five (5) alcohol prep pads
 - c. Two (2) appropriate sterile needles for intramuscular injection
 - 1) If glass ampules of epinephrine are stocked,
 - a) Two (2) sterile filter needles or straws to draw from the glass vial
 - b) Gauze or commercially available shielding to protect providers drawing the epinephrine into the syringe
 - 2) Glass ampules are strongly discouraged due to their increased hazards of breakage and EMS provider injury
 - d. Two (2) sterile syringes specially marked to only indicate a dose of 0.15mg or 0.3mg

3. The Bureau will create approved education and user assistance with this program.
4. The agency medical director shall inspect the kit and verify training of EMTs prior to approval and implementation.
5. Agencies must have approval by the agency and regional medical director. The regional QI program will monitor implementation.

Treatment:**A. All patients treated by BLS agencies that DO NOT carry EPINEPHrine auto-injectors (i.e. patient-assisted EPINEPHrine):**

1. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS if available. See Indications for ALS Use protocol #210.
2. Administer oxygen. (High concentration if difficulty breathing or signs of shock)
3. Determine the severity of the patient's symptoms.
 - a. For severe symptoms listed above:
 - 1) If the patient has a prescribed EPINEPHrine auto-injector, assist² with the administration of single unit dose of EPINEPHrine via auto injector.^{3,4,5,6,7} [EMT ONLY]
 - a) **Adult dose 0.3 mg (e.g. EpiPen)**
 - b) **Pediatric dose 0.15 mg (e.g. EpiPen Junior)**
 - 2) Monitor vital signs and reassess patient.
 - 3) Contact medical command.
 - b. For moderate symptoms listed above:
 - 1) Contact medical command if the patient has a prescribed EPINEPHrine auto-injector.
4. Monitor vital signs and reassess patient.
5. Monitor pulse oximetry – See Pulse Oximetry Protocol #226.
6. Transport.

B. All patients treated by EMTs functioning with BLS agencies that are approved to carry EPINEPHrine auto-injectors (i.e. primary administration of EPINEPHrine) [OPTIONAL]:

1. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS if available. See Indications for ALS Use protocol #210.
2. Administer high concentration oxygen.
3. Determine severity of patient's symptoms
 - a. For severe symptoms listed above:
 - 1) Administer a single unit dose of EPINEPHrine via auto injector.^{4,5,7}
 - a) **Adult dose 0.3 mg (e.g. EpiPen)**
 - b) **Pediatric dose 0.15 mg (e.g. EpiPen Junior)**
 - 2) Monitor vital signs and reassess patient
 - 3) Contact Medical Command.
 - b. For moderate symptoms listed above, Contact Medical Command and follow directions of medical command physician.
4. Monitor vital signs and reassess patient.
5. Monitor pulse oximetry – See Pulse Oximetry Protocol #226
6. Transport
7. Contact Medical Command if condition worsens

Possible Medical Command Orders:

- A. If patient has a second EPINEPHrine auto-injector, medical command physician may order EMT to assist patient with the administration of a second dose of EPINEPHrine.
- B. If BLS agency carries EPINEPHrine auto-injector, medical command physician may order administration of EPINEPHrine.

Notes:

1. Patients with mild allergic reactions should be reassessed for the development of more severe symptoms. If reaction is a single welt without other symptoms, may apply dab of over-the-counter sting reducing medication, if available – these commonly contain benzocaine, diphenhydramine, phenol, and/or camphor.
 2. The EMT may need to administer the medication rather than assist if the patient has a decreased level of consciousness.
 3. Assure that the available auto-injector was prescribed for the patient and is not expired.
 4. Side effects of EPINEPHrine are rare. They include:

Increased heart rate	Vomiting	Excitability
Nausea	Chest Pain	Headache
Dizziness	Anxiousness	Pallor
 5. Use caution in patients over 55 years old. Contact Medical Command if patient does not have severe symptoms as defined above or if unsure whether this is an allergic reaction.
 6. If the patient does not have a prescribed EPINEPHrine auto injector, but there is a bystander available with an auto injector, contact medical command.
 7. Dispose of the injector in a biohazard container.
-

Performance Parameters:

- A. Review every case of EMT administered or assisted EPINEPHrine auto-injector use for documentation of symptoms defined in protocol.
- B. Review every case of EMT administered or assisted EPINEPHrine auto-injector for the appropriate contact with medical command as required by the protocol.
- C. Consider benchmark of on scene time < 10 minutes.

**RESPIRATORY DISTRESS/ RESPIRATORY FAILURE
STATEWIDE BLS PROTOCOL****Criteria:****A. Shortness of breath or difficulty breathing**

1. Conditions which produce SOB from bronchoconstriction that may respond to bronchodilators. These conditions generally are associated with wheezing.
 - a. COPD (emphysema, chronic bronchitis)
 - b. Asthma
 - c. Allergic reaction
 - d. Respiratory infections (pneumonia, acute bronchitis)
2. Conditions which produce SOB without bronchoconstriction that **do not** respond to bronchodilators. These conditions usually are not associated with wheezing.
 - a. CHF
 - b. Pulmonary embolism

Exclusion Criteria:

- A. None.

System Requirements:

- A. Only an EMT that has completed the bronchodilator module through the EMT curriculum or continuing education may assist the patient with administration of a bronchodilator.
- B. CPAP may only be administered by an EMT that has completed the DOH BLS CPAP training and has been approved to administer CPAP by the EMS agency medical director.
- C. **[Optional]** BLS agencies may carry CPAP devices for use by the agency's EMTs.
 1. These agencies must assure that all EMTs using CPAP have completed the DOH BLS CPAP training and have been approved by the agency medical director.
 2. These agencies must carry a CPAP device that has a manometer (or other means to provide specific CPAP pressure) and meets any other specifications required by the DOH.
 3. The EMS agency medical director must oversee the CPAP training, use of CPAP, and quality improvement audits.
- D. **[Optional]** BLS agencies may carry albuterol or albuterol/ipratropium solutions and nebulizer devices for bronchodilator administration by the agency's EMTs.
 1. These agencies must assure that all EMTs using nebulized bronchodilators have completed the DOH EMT nebulized bronchodilator training and have been approved by the agency medical director.
 2. The EMS agency medical director must oversee the nebulized bronchodilator training, storage and use of the medications and equipment, and quality improvement audits.

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS if available. See Indications for ALS Use protocol #210
2. If allergic reaction is suspected and patient meets criteria, proceed with Allergic Reaction / Anaphylaxis protocol #411.

B. Pediatric patients:

1. **NOTE:** If child is sitting in a tripod position with excessive drooling this may be epiglottitis, **transport immediately**. Do not lay the patient flat and do not attempt to visualize the throat.

C. All patients:

1. Apply high concentration oxygen. If necessary, assist respirations with a bag-valve-mask, but avoid overzealous hyperventilation.

2. Monitor pulse oximetry – See Pulse Oximetry Protocol #226
3. Continuous Positive Airway Pressure (CPAP) [OPTIONAL and EMT ONLY]:
 - a. Apply CPAP to adult patient if patient does not have any contraindication to CPAP ¹ AND has **at least TWO** of the following after high concentration oxygen:
 - 1) Pulse oximetry < 90%
 - 2) Respiratory rate > 25 bpm
 - 3) Use of accessory muscles during respiration
 - b. If CPAP is applied ²
 - 1) Titrate pressure up until either improvement or **maximum of 10 cm H₂O pressure**.
 - 2) Remove CPAP if respiratory status deteriorates and assist with BVM ventilation if needed.
4. If patient has a history of using a bronchodilator for asthma/ COPD/ emphysema AND has wheezing with shortness of breath, either:
 - a. Assist patient with his/ her bronchodilator inhaler [EMT ONLY] for conditions associated with wheezing ^{3,4,5}
 - 1) Must be a “short-acting” rapid onset, **bronchodilator** ^{6,7}
 - b. Administer bronchodilator with oxygen driven nebulizer [OPTIONAL and EMT ONLY] using one of the following options:
 - 1) **Albuterol** 2.5 mg in approx.. 3 mL solution
 - 2) **Albuterol** (approx.. 3 mg) and **ipratropium** (500mcg) in nebulizer solution.
 - 3) **Levalbuterol** 1.25mg in approximately 3mL solution
5. Transport and reassess enroute
6. Contact medical command if EMT is unclear whether the patient’s inhaler is a “short-acting” bronchodilator or if EMT has assisted with bronchodilator inhaler administration.^{7,8}

Possible Medical Command Orders:

- A. May order additional doses of patient’s bronchodilator or nebulized bronchodilator (if available).

Notes:

1. CPAP is not indicated if patient:
 - a. has altered mental status and/or cannot follow commands.
 - b. ≤ 14 y/o, unless appropriately sized pediatric mask is available.
 - c. has respiratory rate < 10 **OR** apnea **OR** is unable to maintain an open airway.
 - d. has chest trauma or is suspected of having a pneumothorax.
 - e. has a tracheostomy.
 - f. is actively vomiting or has upper GI bleeding.
2. If CPAP is used:
 - a. Oxygen supply may be depleted rapidly, especially if prolonged transport times. Monitor supply to avoid complete depletion.
 - b. Assure that ALS has been requested, if available, and advise responding ALS agency that CPAP is being used.
 - c. Notify hospital of CPAP use ASAP to assure that CPAP device is available on arrival. Transport patient into hospital on CPAP and do not remove until hospital therapy is ready to be placed on patient.
 - d. Watch for gastric distention, which can result in vomiting.
 - e. CPAP can be used on patient with Do-Not-Resuscitate order.
 - f. Vital signs (including pulse oximetry), must be obtained and documented every 5 minutes.
3. An EMT may assist with the medication **ONE TIME ONLY** prior to contacting Medical Command. Any subsequent administration requires direction from a medical command physician.

4. Bronchodilator inhaler must be prescribed for the patient, and EMS must identify and administer the prescribed dose (“one” or “two” inhalations) for the specific patient.
5. If unsure of the appropriate action, contact Medical Command for further direction.
6. If unable to contact medical command, may repeat previous dose of bronchodilator inhaler 20 minutes after initial dose.
7. The following are commonly prescribed short-acting, rapid-onset, beta-2 agonist inhalants that the EMT may assist with administration:

Brand Name	Generic Name
Combivent	Albuterol / Ipratropium Combination
Maxair	Pirbuterol Acetate
Proair	Albuterol
Proventil	Albuterol
Ventolin,	Albuterol
Xopenex	Levalbuterol

8. The following are medications that **SHOULD NOT** be used:

Long-acting, Delayed-Onset Inhalers	
Brand Name	Generic Name
Aero-Bid, Aero-Bid M	Flunisolide
Advair	Salmeterol / Fluticasone Combination
Alvesco	Ciclesonide
Asmanex	Mometasone
Atrovent	Ipratropium Bromide
Beclovent	Beclomethasone Dipropionate
Brovana	Arformoterol
Dulera	Formoterol / Mometasone Combination
Flovent	Fluticasone Propionate
Foradil	Formoterol
Intal	Cromolyn Sodium
Performomist	Formoterol
Pulmicort	Budesonide
Qvar	Beclomethasone Dipropionate
Serevent	Salmeterol Xinafoate
Spireva	Tiotropium
Symbacort	Formoterol / Budesonide Combination
Vanceril	Beclomethasone Dipropionate

Performance Parameters:

- A. Review every case of EMT CPAP use or EMT-assisted bronchodilator inhaler or nebulized bronchodilator administration for documentation for appropriate indication, appropriate medication, and appropriate contact with medical command.
- B. Consider benchmark of on scene time < 15 minutes if ALS not on scene.

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**CHEST PAIN/SUSPECTED ACUTE CORONARY SYNDROME
STATEWIDE BLS PROTOCOL****Criteria:**

A. Adult patients with symptoms of possible ischemia. Diabetics, women, and elderly patients may have atypical symptoms without retrosternal chest pain: ~~Chest pain of possible cardiac origin.~~ May include:

1. Retrosternal chest heaviness/pressure/pain
2. Radiation of pain to neck, arms or jaw
3. Associated **SOB-Shortness of Breath**, nausea/vomiting or sweating
4. Possibly worsened by exertion
5. Patient over 30 y/o or with known cardiac ischemic disease
6. Patient with history of recent cocaine/**amphetamine drug** use

Exclusion Criteria:

A. Chest pain, probably not cardiac origin.

1. May include:
 - a. Pleuritic chest pain- worsens with deep breath or bending/turning.
 - b. Patient less than 30 y/o
2. If associated with shortness of breath, follow Shortness of Breath protocol #421

System Requirements:

A. Only an EMT that has completed the nitroglycerin module of the curriculum or continuing education may assist with NTG administration.

Treatment:

A. All patients:

1. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS/**IALS** if available. See Indications for ALS/**IALS** Use protocol #210
2. Apply oxygen (High concentration if patient also has difficulty breathing or hypoperfusion)
3. Monitor pulse oximetry – See **Pulse Oximetry Oxygen Administration** Protocol **#202 #226** – and titrate oxygen to the lowest concentration that will maintain SpO₂ between 95 and 99%.
 - a. **If recently exposed to confined space or fire/combustion, use high-flow 100% oxygen.**
4. **[OPTIONAL]** If patient has chest pain that may be of cardiac origin, obtain and transmit 12-lead ECG if BLS agency has this capability. See Protocol #250.
5. If no allergy to aspirin, administer Aspirin, four 81 mg baby aspirins chewed
 - a. **WARNING:** Do not give aspirin if patient is allergic to aspirin.
6. Assist patient with his/her prescribed nitroglycerin based upon the following:^{1,2,3,4} [EMT ONLY]
 - a. Suspected cardiac origin as outlined above.
 - b. **WARNING:** Do not give nitroglycerin if you are aware that a patient **has taken Viagra or similar medications for erectile dysfunction (phosphodiesterase inhibitors) or pulmonary hypertension (Viagra or similar medications such as Levitra, Cialis, Revatio) for erectile dysfunction or pulmonary hypertension** within the last 24-48 hours.⁵

- c. Patient is currently experiencing chest pain or discomfort.
 - d. Blood pressure is > 100 systolic.
7. Transport.
 8. Monitor vital signs and reassess.
 9. Contact medical command if EMT has assisted with nitroglycerin for possible additional doses.⁶

Possible Medical Command Orders:

- A. Medical command may order additional doses of nitroglycerin.

Notes:

1. An EMT may assist with the medication **ONE TIME ONLY** prior to contacting Medical Command. Any subsequent administration requires direction from a medical command physician.
2. Nitroglycerin must be prescribed for the patient, and EMS must identify and administer the prescribed dose (sublingual “tablet” or “spray”).
3. Nitroglycerin should not be given to a child.
4. If unsure of the appropriate action, the EMT should contact Medical Command for further direction.
5. Nitroglycerin use may lead to severe, and possibly fatal, hypotension when given within 24-48 hours after a patient has used drugs that treat erectile dysfunction (phosphodiesterase inhibitors) and pulmonary hypertension. Nitroglycerin should not be given within 24 hours of taking Viagra /Revatio (sildenafil) or Levitra (vardenafil) or within 48 hours of taking Cialis (tadalafil).
6. If unable to contact medical command, may repeat nitroglycerin one time 5 minutes after initial dose as long as systolic blood pressure is > 100 prior to second dose.

Performance Parameters:

- A. For every case of assisting with nitroglycerin, assure documentation of history consistent with cardiac chest pain, assure documentation of vital signs before and after nitroglycerin, assure appropriate contact with medical command.
- B. Consider benchmark of on scene time < 15 minutes if ALS not on scene.

**VENTRICULAR ASSIST DEVICE (VAD) MANAGEMENT
STATEWIDE BLS PROTOCOL**

Criteria:

- A. All patients with a HeartMate II, HeartMate 3, or HeartWare Ventricular Assist Device
1. Description of VAD
 - a. A VAD is a mechanical heart pump that is surgically implanted in patients with severe heart failure in order to aid in the circulation of oxygen-rich blood to the body.
 - b. A VAD can be used as a bridge to heart transplant and/or as destination (life-long) therapy for patients who do not qualify for heart transplant. These designations can be fluid; patients who have a VAD placed as destination therapy can later qualify for transplant.
 - c. VADs are designed to support the failing left ventricle (LVAD). Rarely VADs are placed in the right ventricle to create an RVAD or bi-VAD configuration.
 - d. The VAD is implanted inside the thoracic cavity. Cannulation involves attachment of a tube (inflow cannula) to the left ventricle that diverts cardiac circulation to a small pump. An outflow conduit takes blood from the pump to the aorta, above the aortic valve. This alters the normal physiological blood flow pathway, as blood typically does not travel through the aortic valve, and in most patients the aortic valve remains closed.
 - e. The VAD connects to a small computer (system controller) which powers the pump via an electrical cord referred to as a driveline, that generally exits the body in the abdomen. The controller is powered via batteries and/or power supply directly from the wall.
 - f. Current generation VADs are continuous flow, meaning blood is constantly circulated at a set rate through the body. This alters normal pulsatile physiology due to the pathway of blood flow, bypassing of the aortic valve, resulting in notable feature of reduced or absent pulse pressure. As a result there are implications to clinical exam, inability to palpate peripheral pulses, inability to capture accurate pulse oximetry, inability to measure blood pressure utilizing standard automated cuffs.

Treatment:**A. All patients:**

1. Initial assessment of patient with VAD remains the same as other patients. Many patients call 911 for conditions that are not related to the VAD (altered mental status, trauma, infection or other medical conditions. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS if available. See Indications for ALS Use protocol #210
 - b. Assess pulse
 - 1) Many VAD patients will not have a palpable pulse. Auscultate the VAD over the area of the heart to confirm it is still working – a continuous humming sound indicates the VAD is running.
 - c. Manage critically ill patients using usual resuscitation protocols when indicated – For example see #331A, 3031A, and 3000A ^{1,2,3}
 - 1) If patient is pulseless and apneic, CPR should be initiated. Chest compressions are generally indicated as part of CPR in patients with VADs.
 - a) Defibrillation can be done on a patient with a VAD. Consider anterior-posterior pad placement to avoid placing the defibrillation pads directly over the VAD device.
 - b) Consult the family/ caregiver, VAD information card, and/or VAD coordinator for further guidance.

- c) If doing CPR, contact Medical command or the VAD coordinator or facility which implanted the VAD for advice on chest compressions or other treatments in patients with a VAD.
- d. Assess blood pressure
 - 1) Blood pressure can be measured by using a doppler and blood pressure cuff, or secondarily by automated non-invasive BP (NIBP) measurement.
 - a) The first sound noted via doppler is the Doppler blood pressure. A Doppler blood pressure >60 mmHg generally indicates appropriate perfusion in the patient with a VAD. The Doppler blood pressure should be used in conjunction with other signs of perfusion (skin color, mental status, and capillary refill).
 - b) If a doppler is not available, an automated NIBP should be obtained to determine the mean arterial pressure (MAP).
 2. Apply oxygen (High concentration if patient also has difficulty breathing or hypoperfusion)
 3. Monitor pulse oximetry – See Pulse Oximetry Protocol #226 – and titrate oxygen to the lowest concentration that will maintain SpO₂ between 95 and 99%.
 - a. Pulse oximetry may be unreliable due to lack of pulsatile blood flow. Signs of hypoxia, such as cyanosis and dyspnea, should be used to determine the need for oxygen therapy.
 4. Assess the patient's VAD device/ equipment
 - a. Verify that the driveline exiting the patient is connected to the controller.
 - b. Verify that the controller is powered by adequate power supply (batteries or wall power).
 - c. For any VAD alarms or concerns, consult the patient's care giver. If there is no caregiver, contact the VAD emergency phone number for the patient's device. Hospitals that implant VADs are required to provide 24-hour support to VAD patients.
 - 1) Calling the hospital emergency phone number for device specific questions will be more beneficial than calling Medical Command in most cases.
 - d. Inspect the area where the driveline exits the abdomen for signs of infection. Do not remove existing dressing.
 - e. Inspect the VAD to ensure all cables are connected and power is being supplied to the device.
 - 1) When changing the batteries on the VAD, be sure to only replace one battery at a time. You should NEVER remove both batteries simultaneously.
 5. The patient/ family/ caregivers are generally trained in the function and use of the VAD, especially the controller. Seek their assistance early in the patient contact.
 - a. Consult the patient/ family/ caregiver to determine the type of VAD.
 6. Transport with ALL equipment necessary for function of the VAD, including chargers, extra batteries, and back-up controller.
 7. Monitor vital signs and reassess.
 8. Contact medical command if concerned that VAD issue is reason for patient's illness or for advice regarding the VAD.

Possible Medical Command Orders:

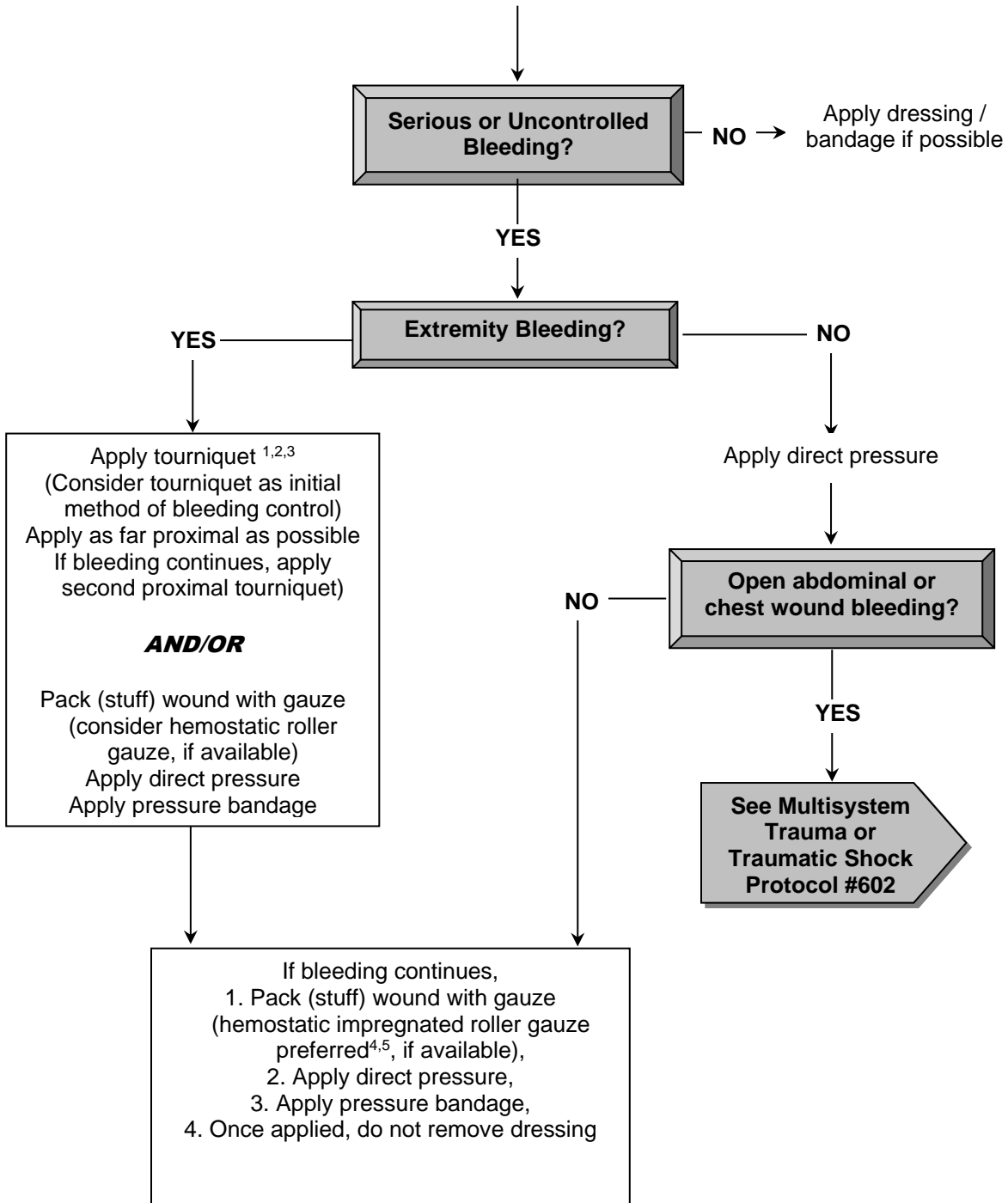
- A. Medical command may order transport to the facility that placed the VAD or to another facility that places VADs, if the patient is deemed to be stable enough for the trip.

Performance Parameters:

- A.** Review for appropriate consultation with medical command to determine destination. Ideally VAD patients are taken to the facility that placed the VAD or to a closer tertiary care facility that also places VADs.

BLEEDING CONTROL STATEWIDE BLS PROTOCOL

Initial Patient Contact- See Protocol #201
Also follow Multisystem Trauma Protocol #602, if applicable.



BLEEDING CONTROL STATEWIDE BLS PROTOCOL

Criteria:

- A. Patients with bleeding or open wounds

Exclusion Criteria:

- A. Internal bleeding
- B. Vaginal bleeding

System Requirements:

- A. Every BLS/ALS ambulance and QRS must carry at least two commercial tourniquets.
- B. [Optional] EMS services may carry approved hemostatic agents for use by appropriately trained EMS providers if the agency complies with the following additional requirements:
 - 1. The agency and agency medical director must assure that all providers that will potentially use the hemostatic agent are appropriately trained in its use.
 - 2. Hemostatic agents that are impregnated into gauze that can be packed into a wound are preferred. Otherwise, hemostatic agent must be contained within a packet, and hemostatic agent in the form of free powder is not approved.
- C. If an agency chooses to carry a hemostatic agent (optional), the agency medical director must select an agent that is approved as defined on the Pennsylvania EMS Vehicle Equipment List.

Notes:

- 1. Application of a tourniquet may be the best initial option to control severe extremity bleeding. Especially when a patient has signs of hypovolemic shock, extremity injuries from explosive devices, in mass casualty situations, or when bleeding is profuse.
- 2. EMS providers should use commercial (tactical/military-type) tourniquets (preferred) but may use a cravat or blood pressure cuff as a tourniquet if additional tourniquet is needed. Do not use rope, wire or other thin strictures that may lead to more damage.
- 3. When a tourniquet is applied: (or previously applied by another individual)
 - a. Apply it as far proximally as possible. If bleeding is not controlled, a second tourniquet may be applied.
 - b. In mass casualty situations, write a "T" and the time of application on the patient's forehead or record tourniquet and time on triage tag.
 - c. Do not release tourniquet pressure in the field unless ordered to by medical command.
 - d. The patient shall be transported by EMS to the most appropriate facility in accordance with Protocol 180 Trauma Patient Destination Criteria.
 - 1) If violence is anticipated, law enforcement officers should accompany EMT during transport. Refer to protocol #801.
- 4. Hemostatic agents are most likely to be indicated for wounds involving the scalp, face, neck, axilla, groin, or buttocks.
- 5. Hemostatic agents are NOT appropriate for minor bleeding, bleeding that can be controlled by direct pressure, bleeding that can be controlled by application of a tourniquet, or bleeding from open abdominal or chest wounds.

Performance Parameters:

- A.** Review all cases where tourniquets or hemostatic agents are applied to patient to assure that patient met protocol indications.

MULTISYSTEM TRAUMA OR TRAUMATIC SHOCK STATEWIDE BLS PROTOCOL

Criteria:

- A. Patient that meets Category 1 or Category 2 trauma triage criteria and has evidence of injury.
- B. Patient with symptoms of shock/hypoperfusion related to a traumatic injury.

Exclusion Criteria:

- A. Cardiac Arrest related to trauma – see Cardiac Arrest – Traumatic Protocol # 332.
- B. Hypotension not related to trauma.

Treatment:

A. All patients:

1. Initial Patient Contact – see Protocol # 201.
 - a. Restrict C-Spine motion until further assessment.
 - b. Consider call for ALS if available but should not delay patient transport. See Indications for ALS Use protocol #210.
 - c. Consider request for air ambulance- if applicable per Trauma Destination Protocol #180.
 - d. Consider rapid extrication.¹
2. Control external bleeding – see Bleeding Control Protocol #601.
3. Administer oxygen (high concentration if Category 1 trauma criteria).
4. Restrict spinal motion, if indicated– See Spine Care Protocol # 261.
5. Treat specific injuries:
 - a. Also follow injury specific trauma protocols if applicable for head injury, impaled object, amputation, or burns.
 - b. If sucking chest wound, cover wound with occlusive dressing sealed on 3 sides. Release dressing if worsened shortness of breath.
 - c. If intestinal evisceration, cover intestines with a sterile dressing moistened with sterile saline or water; cover the area with an occlusive material (aluminum foil or plastic wrap). Cover the area with a towel or blanket to keep it warm. **DO NOT PUSH VISCERA BACK INTO ABDOMEN.**² Transport with knees slightly flexed if possible.
- ~~6. Consider Trendelenberg position (foot of stretcher elevated approximately 6 inches) if:
 - a. Patient has hypotension, and
 - b. There are no chest injuries, no head injuries, no shortness of breath, and position does not cause shortness of breath.~~
7. Maintain body temperature.³
8. If suspected pelvic fracture and hypotension, apply commercial pelvic binding device (if available) for splinting.
 - a. Traction splinting is preferred for isolated femur fractures.
 - b. Padded board splints or other similar devices are preferred for isolated tibia/fibula fractures.
9. Transport the patient ASAP as per Trauma Destination Protocol – See Protocol # 180.
10. Monitor pulse oximetry – See Pulse Oximetry Protocol #226 and Oxygen Administration Protocol #202.

11. Monitor vital signs and reassess.

Notes:

1. Rapid extrication may be appropriate in the following circumstances: danger of explosion (including potential secondary explosion at a terrorism incident); rapidly rising water; danger of structural collapse; hostile environments (e.g. riots); patient position prevents access to another patient that meets criteria for rapid extrication; shock; inability to establish an airway, adequately ventilate a patient, or control bleeding in entrapped position; or cardiac arrest.
2. In wilderness / delayed transport situations with prolonged evacuation time (at least several hours), examine the bowel for visible perforation or fecal odor. If no perforation is suspected, irrigate the eviscerated intestine with saline and gently try to replace in abdomen.
3. If patient is cold, use blankets and possibly hot packs at armpits and groin to prevent additional heat loss.

Performance Parameters:

- A. Documentation of reason for any on scene time interval over 10 minutes
- B. Percentage of calls, without entrapment, with on scene time interval ≤ 10 minutes. Possible benchmark for on scene time for non-entrapped patients = 10 minutes
- C. Documentation of applicable trauma triage criteria

**BLAST/ EXPLOSIVE INJURY
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Injuries sustained in a blast or explosion, including:
 - 1. Industrial explosions
 - 2. Terrorist bombings
 - 3. Any other type of explosion

Exclusion Criteria:

- A. None

System Requirements:

- A. If elevated threat of terrorist bombing, agencies should consider carrying several commercial tourniquets.
- B. If elevated threat of terrorist bombing, fire/rescue/EMS agencies should consider availability of a Geiger counter with initial responding units.
- C. Personal Protective Equipment:
 - 1. If toxic materials are suspected, only appropriately trained and equipped providers should enter the immediate area.
 - 2. Without suspected toxic hazards, appropriate PPE for explosion scenes include outerwear (like coveralls and heavy “turn out” coat), heavy gloves, steel-toed shoes, hardhat, eye protection, dust particle mask.

Treatment:**A. All Patients:**

- 1. Scene Safety – see Protocol # 102
 - a. Consider risks of secondary explosions at scene, triage area, staging area, or receiving facilities
 - 1) Be observant for victims, vehicles, packages or containers that seem out of place.
 - b. Consider risks of radiation contaminated victims of terrorist explosions.
 - 1) Screen scene with Geiger counter, if radiation is suspected and device is available
 - c. Consider risks of unstable buildings and infrastructure.
- 2. Initial Patient Contact – see Protocol #201
 - a. Initiate regional MCI plan if needed
 - 1) Triage patients using regional MCI plan ^{1,2,3}
 - a) During triage, apply tourniquets to severely bleeding extremities.
 - 2) Explosion scenes should be presumed to be crime scenes until cleared by authorities – see Protocol # 919
 - b. Explosions/ blasts may cause bilateral ruptured tympanic membranes – consider that communications with patients may be impaired.
 - c. If thrown by explosion, restrict spinal motion if indicated – see Protocol # 261
- 3. If severe bleeding, see Protocol #601
 - a. Use tourniquets early if severe extremity bleeding.
- 4. Consider blast-related injuries:
 - a. Primary blast injuries (from blast pressure wave) ⁴
 - 1) If Blast Lung suspected due to: SOB, rapid respirations, hypoxia ⁵ (pulse oximetry <95%), wheezing, cough, or coughing blood.
 - a) Administer high-flow oxygen
 - b) Monitor pulse oximetry⁵ – See Pulse Oximetry Protocol #226 and Oxygen Administration Protocol #202.

- c) Observe stable patients for signs of blast lung
- b. Secondary blast injuries (from projectiles) ⁶
 - 1) If impaled objects, follow Protocol #632
- c. Tertiary blast injuries (from patient falling or being thrown by blast or pinned by debris) ⁷
 - 1) Restrict spinal motion, if indicated – see Protocol # 261
 - 2) If multisystem trauma – see Protocol # 602
 - 3) If crush syndrome suspected due to entrapment for >30 minutes under heavy object/debris – obtain ALS if possible.
- d. Quaternary blast injuries (all other injuries/conditions) ⁸
 - 1) If burns – see Protocol # 671
5. Transport
 - a. Do not delay transport if ALS is unavailable
 - b. Transport to trauma center if Category I or II trauma patient – see Protocol # 180
 - c. Closest ED may not be most appropriate receiving facility ⁹
6. Contact Medical Command, if needed

Notes:

1. Severe internal injuries caused by blast wave may not be apparent initially. Eardrum (tympanic membrane – TM) rupture is the most common type of blast pressure injury and may be associated with other more serious blast injuries. When TM rupture is not present, other blast pressure injuries are less likely.
2. Projectile injuries (e.g. from nails or other sharp objects) may be overlooked at initial triage.
3. In MCIs with explosions, most patients have minor injuries. Over triage may delay treatment of the smaller number of patients with salvageable life-threatening injuries.
4. Primary blast injuries are caused by the pressure wave of the blast. These include eardrum (tympanic membrane – TM) rupture, eye globe rupture, blast lung, intestinal rupture, and intra-abdominal bleeding.
5. Hypoxia may precede other signs of blast lung injury like tachypnea or shortness of breath. Hypoxia despite high-flow oxygen is an indication for early endotracheal intubation, and highest priority triage and priority transport are indicated.
6. Secondary blast injuries are caused by projectiles. These may include debris from structures like glass or wood or may include debris from improvised explosive devices (IEDs) like nails in a pipe bomb. Serious injuries from penetrating objects may be overlooked during triage.
7. Tertiary blast injuries are caused by falling, being thrown or being pinned or entrapped. These include fractures and other injuries seen in blunt trauma. They also may include crush syndrome and compartment syndrome in entrapped patients.
8. Quaternary blast injuries are caused by other trauma/ environment related to explosions or by preexisting conditions of patient. Examples include burns and respiratory distress due to post-explosion dust.
9. Historically, in explosions with a large number of patients, the closest ED becomes overwhelmed with ambulatory patients before any EMS patients arrive. These overwhelmed facilities may not be able to appropriately treat more serious patients arriving by EMS. Transport officer should take this into consideration when dispersing patients to receiving facilities.

Performance Parameters:

- A. Transport Category I and II trauma patients within 10 minutes of EMS patient contact unless delayed because patients exceed medical resources available

Additional Resources:

www.emergency.cdc.gov/BlastInjuries Centers for Disease Control

HEAD INJURY/ TRAUMATIC BRAIN INJURY STATEWIDE BLS PROTOCOL

Criteria:

- A. All patients with traumatic mechanism and suspected traumatic brain injury (TBI), including:
1. Head injury and altered mental status (GCS <15).
 2. Patient asking repetitive questions
 3. Witnessed or suspected loss of consciousness (LOC)
 4. Seizure after trauma, whether still seizing or not
 5. Multisystem trauma requiring airway or ventilatory support

Exclusion Criteria:

- A. Isolated trauma without any evidence of LOC or alteration in mental status/GCS at any time.

Treatment:

A. All patients:

1. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS if available. See Indications for ALS Use protocol #210
 - b. Consider call for air ambulance. See Trauma Destination protocol #180
2. Apply cervical collar and restrict spinal motion, if indicated – See Spine Care Protocol #261.¹
3. Assure a patent airway.
4. PREVENT HYPOXIA ²
 - a. Administer high concentration oxygen at 15 lpm via NRB mask to all patients
 - b. Measure and continuously monitor pulse oximetry - See Pulse Oximetry Protocol #226 – but all patients should continue to get high-flow oxygen even if SpO₂ is adequate
 - 1) If SpO₂ <90% (despite NRB) or if patient hypoventilating, insert OP/NP airway and ventilate with BVM (at rates listed below).
 - 2) If SpO₂ ≥90% and patient breathing adequately, continue NRB mask high-flow oxygen and continuously monitor oxygen saturation.
5. Assure adequate ventilation. If SpO₂ <90% (despite NRB) or if RR <10, insert OP/NP airway and ventilate with BVM and high flow supplemental oxygen. **DO NOT HYPERVENTILATE.**^{3,4}
 - a. Ventilate
 - 1) 10 bpm for an adult (≥15 years-old)
 - 2) 20 bpm for a child (2-14 years-old)
 - 3) 25 bpm for an infant (<12 months-old)
 - b. Consider using rate timer or ETCO₂ monitor (when ALS present) to ensure that hyperventilation is avoided.
6. Also follow Multisystem Trauma/ Shock Protocol # 602, if applicable. ⁵
7. Place sterile dressing over soft tissue injury sites, but don't delay transport:
 - a. Do not apply pressure to open or depressed skull fracture.
 - b. Treat eye injuries appropriately.
8. Transport according to Trauma Destination protocol # 180.
9. Monitor pulse oximetry – See Pulse Oximetry Protocol #226 – but all patients with GCS < 15 or possible TBI indications above should continue to receive high concentration oxygen

10. If GCS<15 or continued confusion, check blood glucose, if available – See Glucose Monitoring Protocol #228.

11. Monitor vital signs and reassess.

Notes:

1. Avoid any straps or constriction across the neck since this may increase intracranial pressure.
2. **CLINICAL AXIOM:** A single non-spurious SpO₂ of <90% is independently associated with a doubling of death rate.
3. **CLINICAL AXIOM:** In intubated patients, hyperventilation is independently associated with at least a doubling of death rate, and some studies have shown that even moderate hyperventilation can increase the risk of dying by six times.
 - a. NO ONE (in or out of the hospital) can manually ventilate at the proper rate without ventilatory adjuncts. EVERYONE inadvertently hyperventilates unless meticulously attempting to prevent it. EMS agencies should consider adjuncts to prevent hyperventilation, which include:
 - b. Ventilation electronic rate timing devices (for example, LED light that flashes 10 times/min or ventilation prompt in airway setting on monitor/defibrillator CPR metronome)
 - c. Pressure-controlled BVMs and smaller volume adult BVMs that avoid hyperventilation by limiting ventilation volume
 - d. ETCO₂ monitoring, target ETCO₂ = 40 mmHg (range 35-45), when with ALS/**IALS**
4. **CLINICAL AXIOM:** A single episode of SBP <90 is independently associated with at least a doubling of death rate. Repeated episodes of hypotension can increase the risk of dying by as much as eight times.

Performance Parameters:

- A. Patients who do not follow commands (motor GCS ≤5) or those with total GCS ≤ 13 should be transported to a trauma center when possible
- B. Review for use of high-flow oxygen in patients with any LOC, GCS<15, asking repeated questions, or seizure after head trauma.

TOOTH AVULSION STATEWIDE BLS PROTOCOL

Criteria:

- A. Patient with avulsed tooth from facial trauma. Avulsed tooth is a complete tooth with root and crown.

Exclusion Criteria:

- A. Fractured teeth that have broken or chipped but do not include the root.
- B. Primary or “baby” teeth

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.
2. Follow Multisystem Trauma/ Traumatic Shock protocol #602, if applicable.
3. Attempt to preserve the tooth:
 - a. Do not scrub, rub or handle the root of the tooth.
 - b. If available irrigate the tooth with saline or sterile water.
 - c. Prepare the tooth for transport in one of the following media (in order of preference):
 - 1) Immerse in commercial tooth preservation solution, if available, (i.e. Hank’s Balanced Salt Solution) or in oral rehydration salt solutions (e.g. Gatorade)
 - 2) Wrap in clean clear cling film (i.e. plastic wrap).
 - 3) Immerse in milk in small clean container.
 - 4) Wrap in sterile gauze moistened with saline and place in plastic bag.
 - d. Contact Medical Command if time to receiving facility is more than 30 minutes.
4. Control oral dental bleeding by asking alert patient to bite down on wad of gauze (consider gauze with hemostatic agent).
5. Transport.

Possible Medical Command Orders:

- A. In wilderness/ delayed transport situations, may order attempt at reinsertion of the avulsed tooth if associated fractures are not suspected.

Notes:

1. Successful reimplantation of an avulsed tooth is directly dependent on the time to reinsertion. Proper preparation of the avulsed tooth increases the time that the root is viable for reimplantation.

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**IMPALED OBJECT
STATEWIDE BLS PROTOCOL**

Criteria:

- A. Patient with an impaled object.

Exclusion Criteria:

- A. None.

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.
2. Follow Multisystem Trauma/ Traumatic Shock protocol #602, if applicable.
3. Treat special conditions as follows:
 - a. If the impaled object is in the cheek and bleeding profusely or obstructing the airway:
 - 1) Remove object if this can easily be done.
 - 2) Maintain open airway.
 - 3) Control bleeding and dress wound.
 - b. If the impaled object is in the eye:
 - 1) Stabilize object with sterile dressing, place cup over eye and secure.
 - 2) Cover unaffected eye.
 - c. If the impaled object is not in the cheek or eye:
 - 1) Stabilize object with bulk dressing and secure.
 - 2) Do not remove object.
 - d. If patient is impaled on stationary or fixed object:
 - 1) If possible, carefully sever object.
 - 2) Secure object with bulky dressing.
 - 3) Check for exit wound and treat accordingly.
 - 4) Attempt to transport object with patient.
4. Do not remove the object unless it occludes or endangers the airway or prohibits the performance of adequate CPR. If unsure of appropriateness of removing object, contact Medical Command.¹
5. Control bleeding and place sterile bulky dressings over the wound and around the object to stabilize it in place. Secure dressings in place with bandages and tape.
6. Immobilize the injury as appropriate.
7. Transport.

Possible Medical Command Orders:

- A. In some instances, in addition to those permitted above, medical command may order removal of the impaled object.

Notes:

2. In wilderness/ delayed transport situations, removal of the object may be appropriate to facilitate transport or wound irrigation.

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**AMPUTATION
STATEWIDE BLS PROTOCOL**

Criteria:

- A. Patient with amputation of a digit or limb

Exclusion Criteria:

- A. None

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS if signs of hypovolemic shock or if patient is entrapped. See Indications for ALS Use protocol #210
2. Control bleeding.
3. Also follow Multisystem Trauma/ Traumatic Shock protocol # 602 unless amputation only involves fingers/ toes.
4. Place sterile dressing over open soft tissue injury sites.
5. Retrieve avulsed or amputated part: ¹
 - a. Wrap avulsed part in gauze soaked with sterile saline.
 - b. Place part in sealed plastic bag.
 - c. Keep part cool. Place the sealed bag in a second bag containing ice water. Rotate the part often during transport. **Do not place directly on ice.**
 - d. For amputation of limbs, wrap the part in a clean moistened towel or other like material and place it in a large plastic bag and keep it cool.
 - e. Do not place the part directly on ice.
6. Transport to appropriate facility.^{2,3}

Possible Medical Command Orders:

- A. Medical command physician may order transport to a facility capable of reimplantation surgery or to a trauma center.

Notes:

1. If priority condition exists, do not delay transport to search for missing part. Additional emergency personnel may remain at scene to retrieve part. Ideally EMS providers should prepare any amputated part, as described above, before transport to patient's location.
2. Any patient with an amputation above the wrist or above the ankle should be transported per Trauma Destination protocol # 180.
3. Patients with finger amputations may benefit by direct transport to a center capable of reimplantation surgery. Call medical command as needed for guidance.

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**BURNS
STATEWIDE BLS PROTOCOL**

Criteria:

- A. Thermal injury from exposure to intense heat
- B. Injury from electrical shock or lightning strike
- C. Skin injury from chemical exposure

Exclusion Criteria:

- A. None

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.
 - a. When dealing with hazards associated with burns (e.g. fire, electricity, chemicals) appropriate PPE must be worn and individuals with appropriate training should deal with these hazards.
 - b. When triaging multiple patients with lightning injury, initial resources should be committed to individuals that have no sign of life (i.e. “reverse triage”) rather than individuals who have vital signs.
 - c. Stop the burning process with water or saline. Caution- use care to avoid hypothermia
 - d. Restrict spinal motion, if indicated – See Spine Care Protocol # 261.
 - e. Consider call for ALS or air medical transport as appropriate. See Indications for ALS Use protocol #210.
2. Assure open airway and assist ventilations as needed.¹
3. Administer high concentration oxygen and monitor pulse oximetry – See Pulse Oximetry Protocol #226, **Optional protocol #227**, and **Oxygen Administration Protocol #202** – if:
 - a. Coughing or short of breath.
 - b. Exposure to smoke in a confined space.
 - c. Facial burns
4. Remove all clothing, jewelry and any debris from involved area. Cut around clothing that is stuck to wound.
5. Treat special conditions as follows:
 - a. Semi-solids (tar, etc.):
 - 1) Flush with cool water.
 - b. Chemical burn:
 - 1) Liquid substance - Irrigate with copious amounts of room temperature water. Do not contaminate uninjured areas while flushing.
 - 2) Dry substances- With gloves and appropriate PPE, brush remaining powder from skin and clothing, then irrigate with copious amounts of water.²
 - c. Electrical:
 - 1) Dress entrance and exit wounds and other injuries.
6. Care of burned skin:

- a. Cover burned areas with dry sterile dressings, sterile commercial burn sheets/ dressings, or clean sheet.
 - b. Maintain body temperature.
 - c. Estimate the extent of the burn using the Rule of Nines (See appendix).
7. Transport to the closest appropriate medical facility, as follows:
- a. If unable to maintain airway or unable to ventilate or patient has symptoms of shortness of breath / cough or inhalation injury suspected (for example burned nasal hairs or carbonaceous sputum) or if unable to control profuse bleeding, transport to closest hospital.
 - b. If patient has associated trauma and meets trauma triage criteria, transport per Trauma Triage Protocol # 180.
 - c. Medical Command Physician may assist in decision for direct transport to a burn center. Consider transport to a burn center if:
 - 1) The burn meets one of the following clinical criteria:
 - a) Partial thickness burns of >10% body surface area
 - b) Burns involving the face, hands, feet, genitalia, perineum, or major joints
 - c) Third degree burns in any age group
 - d) Electrical burns, including lightning injury
 - e) Chemical burns
 - f) Inhalation injury
 - 2) **AND**, the patient does not meet trauma triage criteria,
 - 3) **AND**, the difference between estimated transport time to the closest receiving facility and the burn center is 20 minutes or less.
 - d. If patient meets none of the above, transport to closest hospital.
 - e. Contact medical command if unsure of most appropriate destination.
8. Monitor vital signs and reassess

Notes:

1. **Caution:** patients who have inhaled hot gases or have burns about the face or who have symptoms of shortness of breath or cough can deteriorate rapidly.
2. Note- some substances, like dry lime will cause a heat-producing reaction when mixed with water. Copious water should be available before beginning to irrigate.

Performance Parameters:

- A.** Compliance with trauma triage and burn center destination protocols.
- B.** Evaluate on scene times for non-entrapped burn victims. Victims that meet criteria for high concentration of oxygen should be transported rapidly. Possible benchmark for on scene time for untrapped victims = 10 minutes.

**HYPOTHERMIA / COLD INJURY / FROSTBITE
STATEWIDE BLS PROTOCOL****Criteria:**

- A. Generalized cooling that significantly reduces the body temperature.
- B. If temperature reading is available, body temperature < 95° F (35° C).
- C. Note that hypothermia is severe if core body temperature is < 90° F (32° C).
- D. Frostbite generally affects feet, hands, ears, and/or face. Skin initially appears reddened, then mottled, bluish, white and/or gray. This is painful initially then becomes numb.

Exclusion Criteria:

- A. DOA, including the following - see DOA protocol # 322.
 - 1. Submersion for >1 hour.
 - 2. Body tissue/chest wall frozen solid.
 - 3. Body temperature same as surrounding temperature and other signs of death (lividity/ rigor)

Treatment:**A. All patients:**

- 1. Initial Patient Contact – see Protocol # 201.
 - a. Assess pulse for 45 seconds.¹
 - b. Consider call for ALS if available. See Indications for ALS Use protocol #210.
 - c. Consider air ambulance if severe hypothermia and transport time to hospital capable of rapid extracorporeal rewarming is more than 30 minutes.
- 2. Apply oxygen (High concentration if altered mental status).^{2,3}

B. Systemic Hypothermia:

- 1. Handle patient gently and avoid excessive or rough movement of the patient.
- 2. Place the patient in a warm, draft free environment.
- 3. Remove wet clothing and cover with warm blankets.
- 4. **If the patient is unconscious or is not shivering:**
 - a. If respirations and pulse are absent, start CPR.^{1,4} It is possible that the patient is still alive.
 - b. Transport **IMMEDIATELY**^{5,6,7}, continuing CPR as necessary.
 - c. Contact Medical Command.
- 5. **If the patient is conscious and shivering:**
 - a. Rewarm the patient slowly:
 - 1) Place heat packs on the patient's groin, lateral chest or axilla and neck. Do not place heat packs directly against skin- wrap in towel.
 - 2) If the patient is alert, administer warm non-caffeinated beverages (if available) by mouth slowly.⁸
- 6. Transport⁶
- 7. Perform ongoing assessment

C. Frost bite:

1. Keep patient warm while exposing affected part.
2. Apply loose sterile dressing to affected part.
3. **DO NOT:**
 - a. Rub affected part or break blisters.
 - b. Expose part to dry heat.
 - c. Immerse part in snow or hot water.⁹
 - d. Allow affected part to thaw if it may refreeze before transport is completed.
4. **DO:**
 - a. Transport, keeping patient warm.
 - b. Perform ongoing assessment.

Notes:

1. **Vital signs should be taken for a longer time than usual, so that a very slow pulse or respiratory rate is not missed. Assess pulse for 45 seconds. If a pulse or respirations are detected, do not perform CPR.**
 2. Use warmed humidified oxygen if available.
 3. Agencies that use optional pulse oximetry monitors should not use them in hypothermic patients since pulse oximeters are unreliable in this situation.
 4. In suspected severe hypothermia (core temperature, if available, is below 90° F) and an AED is advising shock, shock no more than 3 times. If there is still no pulse, continue CPR and transport to an appropriate facility.
 5. If cardiac arrest or unresponsive to verbal stimuli, transport to trauma center following Trauma Triage Protocol # 180. Transport to center capable of extracorporeal rewarming (cardiac bypass) if this adds no more than 20 minutes to transport time to closest appropriate trauma destination hospital. Contact medical command at destination facility as soon as possible to provide maximum time for staff to prepare to receive the patient.
 6. If the patient has severe hypothermia and vertical evacuation is required, transport the patient in a level position when possible. Transporting vertically with the head up has been associated with seizures and death.
 7. In submersion or cardiac arrest, hypothermia is protective. Do not attempt to rewarm the patient during transport to a facility that is capable of rapid extracorporeal rewarming.
 8. **DO NOT** permit fluids by mouth if patient also has severe traumatic injuries or abdominal pain.
 9. In wilderness / delayed transport situations, rewarming the frostbitten area in warm water may be appropriate if transport is delayed significantly. The area should not be rewarmed unless it can be completely rewarmed and then protected from additional cold injury.
-

HEAT EMERGENCY STATEWIDE BLS PROTOCOL

Criteria:

- A. Heat Stroke¹** – Patients should be treated as heat stroke if they have all of the following:
1. Exposure to hot environment, and
 2. Hot skin, and
 3. Altered mental status
- B. Heat Exhaustion** - Patient presents with dizziness, nausea, headache, tachycardia and mild hypotension. No mental status changes. Temperature is less than 103° F. Rapid recovery generally follows saline administration.

Exclusion Criteria:

- A. None.**

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.

B. Heat Stroke:

1. Consider call for ALS if available. See Indications for ALS Use protocol #210.
2. Remove the patient from the heat source, if possible.
3. Administer oxygen– See Pulse Oximetry Protocol #226 and Oxygen Administration Protocol #202.
4. Remove excess clothing:
5. ***If skin is hot to touch and patient has altered mental status, treat as life threatening emergency:***
 - a. Cool the patient quickly by dousing with water/ applying wet towels and applying ice (e.g. packing in ice or applying cold packs at the neck, axilla (armpits) and groin.)²
 - b. If shivering begins, slow cooling process.
 - c. Do not give anything by mouth.
 - d. Transport immediately.
 - e. Perform ongoing assessment.

C. Heat Exhaustion:

1. Remove the patient from the heat source.
2. Administer oxygen– See Pulse Oximetry Protocol #226
3. Remove excess clothing.
 - a. Apply cool compresses.
 - b. Allow oral intake of cool fluids (ideally commercial sport/rehydration drinks) if the patient is alert and oriented and without nausea.³
 - c. Transport.
 - d. Perform ongoing assessment.

Notes:

1. Patient's thermoregulatory mechanisms break down completely. Body temperature is elevated to extreme levels, which results in multi-system tissue damage including altered mental status. Heat stroke often affects elderly patients with underlying medical disorders. Patients usually have dry skin; however, up to 50% of patients with exertional heat stroke may exhibit persistent sweating. Therefore, patients with heat stroke may be sweating.
2. **Do not delay transport if these cooling modalities are not immediately available.**
3. Do not permit the patient to drink if altered mental status or abdominal pain.

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NEAR DROWNING AND DIVING INJURY STATEWIDE BLS PROTOCOL

Criteria:

- A. Submersion leading to respiratory symptoms

Exclusion Criteria:

- A. Patients in cardiac arrest – See Cardiac Arrest Protocol # 331.
- B. Patients with confirmed submersion for more than 1 hour – See DOA Protocol # 322.

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS if symptoms of shortness of breath. See Indications for ALS Use protocol #210
 - b. Consider air transport if altered LOC. See Air Ambulance Use protocol #190.
2. If diving involved or possible in mechanism of injury, restrict cervical motion and follow Spine Care protocol # 261.¹
3. Maintain airway
4. Apply oxygen (High concentration).
 - a. Assist ventilations and suction if secretions block the airway.
5. Obtain pulse oximetry reading – See Pulse Oximetry Protocol #226
6. Consider hypothermia. If present – See Hypothermia Protocol # 681
 - a. Handle the patient gently and carefully²
7. Transport immediately.^{3,4}
8. Monitor vital signs and reassess.

Possible Medical Command Orders:

- A. Medical command may contact the Divers Alert Network (DAN) Hotline at 919-684-9111. This 24-hour hotline is associated with Duke University and assists medical professionals in arranging evacuation and hyperbaric recompression at properly equipped and staffed chambers.

Notes:

1. Cervical spine injuries must be considered for any patient found ill or injured in any body of water or immediately removed from a body of water.
2. Rough handling may cause the hypothermic patient to develop a fatal arrhythmia.
3. If SCUBA incident with rapid ascent, transport on the left side of the body with the head down,
4. All victims of drowning who require any form of resuscitation (including rescue breathing alone) should be transported to the hospital for evaluation and monitoring, even if they appear to be alert and demonstrate effective cardiorespiratory function at the scene. Contact medical command if patient refuses transport.

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**ALTERED LEVEL OF CONSCIOUSNESS/ DIABETIC EMERGENCY
STATEWIDE BLS PROTOCOL****Criteria:**

- A.** Patient with new decrease in level of consciousness. Causes may include:
1. Hypoglycemia. (Blood glucose <60mg/dL)
 2. Drug overdose.
 3. Stroke.
 4. Head Trauma.
 5. Seizure.

Exclusion Criteria:

- A.** If stroke is suspected - see Stroke Protocol # 706.
- B.** If carbon monoxide, drug overdose, or other poisoning is suspected - see Poisoning Protocol #831

System Requirements:

- A.** Glucose measurement by glucometer may only be performed by an EMT with an approved BLS agency that meet the system requirements in Optional BLS Glucose Monitoring Protocol #228
- B. [Optional]** BLS agencies may carry **glucagon** nasal powder spray or intramuscular autoinjector for use by appropriately trained and credentialed EMTs in the agency.
1. These agencies must assure that all EMTs using nasal glucagon have completed the DOH BLS Nasal Glucagon training and have been approved by the agency medical director.
 2. All glucagon nasal powder or intramuscular autoinjectors must be carried using the manufacturer's specifications.
 3. The EMS agency medical director must oversee the use of intranasal glucagon powder and related quality improvement audits.

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS if available.
2. Manage Airway and assist ventilation as necessary.
3. Administer high concentration oxygen – See Pulse Oximetry Protocol #226 and Oxygen Administration Protocol #202.
4. Examine patient for evidence of specific causes (for example Stroke, Poisoning, Head Injury, or Seizure) and follow other protocols when appropriate:
 - a. Medical alert tag
 - b. Needle marks
 - c. Medicine containers
 - d. Insect stings or bites
 - e. Head trauma
 - f. Incontinence of urine
 - g. Tongue bite wounds
 - h. Stroke
5. If patient is unresponsive and there is no concern for trauma, place patient in the lateral recumbent (recovery) position and continue to monitor airway.

6. If opioid overdose suspected, administer naloxone, if available, following Poisoning/Overdose Protocol #831.
7. [Optional] If BLS agency carries a glucometer and the EMT is appropriately trained, check patient's blood glucose. See Optional BLS Glucose Monitoring Protocol #228.
8. If hypoglycemia is suspected:
 - a. If patient can swallow and hypoglycemia is suspected (clinically or by blood glucose <60) and patient can swallow, administer **oral glucose**.¹
 - b. If patient is unable to follow commands or swallow and blood glucose < 60 mg/dl, administer **glucagon** (if available) as either:
 - 1) 3 mg nasal powder spray, or
 - 2) intramuscular autoinjector,
 - a) 1 mg dose for adults or children over 20 kg and 5 years of age
 - b) 0.5 mg dose for children <20 kg and under 5 years of age.
9. Transport immediately.
10. Re-assess the patient.

Notes:

1. Hypoglycemia is suspected if patient has a history of diabetes or takes insulin or oral diabetes medications. If the patient can't swallow but still has gag reflex, oral glucose may be placed between the cheek and gum in small amounts. Appropriate methods of delivering oral glucose include medical glucose and cake icing from a tube. If the patient is fully awake, he or she may also drink liquids containing high glucose levels (e.g. orange juice or sugar sodas).

Performance Parameters:

- A. Review all uses of oral glucose or intranasal/intramuscular glucagon for appropriate assessment for non-diabetic causes of altered consciousness.

**SUSPECTED STROKE
STATEWIDE BLS PROTOCOL****Criteria:**

- A.** Patients may have the following clinical symptom(s) and last seen well within 24 hours:
1. Altered level of consciousness
 2. Impaired speech
 3. Unilateral weakness / hemiparesis
 4. Facial asymmetry / droop
 5. Headache
 6. Poor coordination or balance
 7. Partial loss of peripheral vision
 8. Vertigo

Exclusion Criteria:

- A.** Consider hypoglycemia, trauma, and other etiologies of stroke symptoms, and follow applicable protocol if appropriate.

System Requirements:

- A.** Glucose measurement by glucometer may only be performed by an EMT with an approved BLS agency that meet the system requirements in Optional BLS Glucose Monitoring Protocol #228.
- B.** BLS providers may use the optional mRACE Scale but must complete DOH approved education for mRACE assessment. EMS agencies using mRACE Scale must ensure that the agency's providers have completed this education.

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.
 - a. If history of diabetes and signs of hypoglycemia, also follow Diabetic Emergency protocol #702
 - b. Consider call for ALS if altered level of consciousness. See Indications for ALS Use protocol #210
2. Maintain open airway.
 - a. Use an oral or nasal airway as appropriate.
3. Apply oxygen, only if needed to keep SpO₂ between 95-99%.
4. Monitor pulse oximetry – See Pulse Oximetry Protocol #226
5. Obtain patient history, (i.e. OPQRST) and examine patient.
 - a. Exact time of symptom onset or time patient last seen well is extremely important.¹
 - b. Assess Cincinnati Stroke Scale – See Table²
 - c. [Optional] Assess mRACE scale. See attached mRACE Score Sheet.³

Is acute stroke suspected by Cincinnati Prehospital Stroke Scale ² (CPSS)?

Face - facial droop present,
OR
Arm - upper extremity arm drift present (arms extended/ palms up),
OR
Speech - inability to say, “The sky is blue in Pennsylvania” normally,
AND
Time - time since last known well < 24 hours

Large vessel occlusion (LVO) suspected by ≥ 2 CPSS exam findings or mRACE Score (optional) ≥ 5

LVO stroke may benefit from care at Comprehensive or Thrombectomy-Capable Stroke Center

Other signs of possible stroke include poor balance, vertigo, and partial loss of peripheral vision

6. [Optional] If BLS agency carries a glucometer and the EMT is appropriately trained, check patient’s blood glucose. If patient glucose <60, Follow Optional BLS Glucose Monitoring Protocol #228 for possible glucose administration.
7. Minimize on scene time - transport immediately. Do not wait for ALS arrival before transport.
8. Contact medical command and receiving facility as soon as possible (especially for all patients with any abnormality of Cincinnati Prehospital Stroke Scale or mRace (optional) ≥ 5. Medical command can help identify patients with suspected large vessel occlusion who will benefit from interventional therapy at a comprehensive or **thrombectomy capable** stroke center ^{3,4,5,6}
9. Transport to the closest appropriate primary, thrombectomy-capable, or comprehensive stroke center, if the patient can arrive at the stroke center within 45 minutes.^{5,6} Otherwise, transport to an acute stroke ready hospital if that facility can be reached within 45 minutes. It may be important for a family member to accompany the patient during transport to verify the time of symptom onset and provide consent for therapy.
10. **Transport in supine position.**
 - a. If patient can’t tolerate being flat, avoid raising head and shoulders more than 30°.

Possible Medical Command Orders:

- A. Medical command may divert patient to local hospital that is the most prepared to care for acute stroke patients or to comprehensive/**thrombectomy capable** stroke center if large vessel occlusion is suspected.

Notes:

1. Attempt to identify the precise time of the onset of the patient’s first symptoms. The time of onset is extremely important information, and patient care may be different if patient can be delivered to a certified primary stroke center within 3 hours from onset of symptoms. Time of onset is based upon the last time that the patient was witnessed to be at his/her neurologic baseline.

2. **Cincinnati Prehospital Stroke Scale.** If any of the following is abnormal and new for the patient, he/she may have an acute stroke:
 - a) Facial Droop (patient smiles or shows teeth) - abnormal if one side of the face does not move as well as the other.
 - b) Arm Drift (patient holds arms straight out in front of him/her and closes eyes) – abnormal if one arm drifts down compared with the other.
 - c) Speech (patient attempts to say “The sky is blue in Pennsylvania”) – abnormal if patient slurs words, uses inappropriate words, or can’t speak.
 - d) Although not parts of the Cincinnati Prehospital Stroke Scale, sudden onset of unilateral leg weakness or sudden decrease in peripheral vision are also signs of acute stroke.
 3. [Optional] If mRACE score is ≥ 5 , there is an increased chance of a large vessel occlusion (LVO) stroke. Early contact with medical command may help direct these individuals to a comprehensive stroke center.
 4. Report time last seen well and abnormal findings from Cincinnati Prehospital Stroke Scale or optional mRACE score to medical command physician.
 5. In rural areas, if patient can be delivered by air (but not by ground) to receiving facility within 3 hours of symptom onset, consider contact with medical command for assistance in deciding upon the utility of air medical transport. Consider air transport if ground transport to the closest certified stroke center is >45 minutes. See Protocol #181.
 6. The current list of recognized Stroke Centers (which also includes comprehensive **and thrombectomy capable** stroke centers) is posted on the Pennsylvania Department of Health website, found at <https://www.health.pa.gov/topics/EMS/Pages/Recognized-Stroke-Centers.aspx>.
-

Performance Parameters:

- A. Review on scene time for all cases of suspected stroke with time of symptom onset less than 3 hours. Possible benchmark of on scene time <10 minutes.

Modified RACE Score

EMS Agency:		Patient Name:		DOB: / /	Date of Exam: / /
EMS Unit:		Symptom Onset Date: / /		Time:	Witnessed by:
Speech*	Ask patient to repeat the phrase: "The sky is blue in Pennsylvania"	No numerical value		<input type="checkbox"/> Normal Speech <input type="checkbox"/> Abnormal Speech	
Facial Palsy*	Ask patient to smile and show their teeth	<ul style="list-style-type: none"> • Absent (normal facial movement) • Mild (some facial movement) • Moderate to severe (little to no facial movement) 		0 1 2	
Arm Motor Function*	Ask patient to raise both arms, palms up, for 10 seconds	<ul style="list-style-type: none"> • Normal (no drift) to mild drift • Moderate (able to lift arm, unable to hold for 10 secs) • Severe (unable to lift either arm against gravity) 		0 1 2	
Leg Motor Function	Ask patient to raise each leg, one at a time, and hold for 5 seconds	<ul style="list-style-type: none"> • Normal (no drift) to mild drift • Moderate (able to lift leg, unable to hold for 5 secs) • Severe (unable to lift either leg against gravity) 		0 1 2	
Head & Gaze Deviation	Ask patient to move their eyes horizontally by tracking your finger and assess gaze deviation	<ul style="list-style-type: none"> • Absent (moves both eyes to track finger) • Present (fixed or unable to shift gaze past midline) 		0 1	
Aphasia	Ask patient to follow 2 commands: 1. Close your eyes 2. Make a fist (on unaffected side)	<ul style="list-style-type: none"> • Performs both tasks correctly • Performs 1 task correctly • Performs neither task correctly 		0 1 2	
Agnosia	Determine if patient recognizes deficit: 1. Ask the patient (while pointing at affected arm): "Whose arms is this?" 2. Ask the patient to clap their hands	<ul style="list-style-type: none"> • Recognizes arm & claps or recognizes inability to clap • Cannot perform one of the tasks • Cannot perform either task 		0 1 2	
<i>If total is ≥5 and time from last known well to arrival at the closest Primary Stroke Center will be >3 hours, contact Medical Command for consideration of transport to a facility capable of performing endovascular interventions. (comprehensive or thrombectomy capable stroke centers)</i>					Total: _____
Patient's Next of Kin:		Relationship:		Phone Number:	
Notes:					

* Any abnormal finding in speech, facial palsy, or arm motor function is a positive finding for the Cincinnati Prehospital Stroke Screen.

**EMERGENCY CHILDBIRTH
STATEWIDE BLS PROTOCOL****Criteria:**

- A.** Pregnancy with signs of imminent delivery including crowning, mother with urge for bowel movement, frequent contractions < every 2 minutes, or worsening of perineal discomfort.

Treatment:**A. All patients:**

1. Initial Patient Contact – see Protocol # 201.
 - a. Consider call for ALS if available. See Indications for ALS Use protocol # 210.
2. Prepare for delivery if crowning or if contractions < every 2 minutes and patient feels need to push
 - a. Position patient for delivery
 - b. Bring OB kit to patient
 - c. Prepare for delivery in a place where the infant will be warm
3. Administer oxygen.
4. Monitor vital signs frequently
 - a. If hypotensive, place patient in left lateral recumbent position or manually push uterus to patient's left.
5. Contact medical command prior to leaving scene, when possible, to discuss appropriate destination for mother and infant – See Patient Destination Ground Transport Protocol #170.

B. Normal delivery and Newborn Care:

1. Assist with vaginal delivery of infant¹
 - a. Check for cord around neck, if present:
 - 1) Attempt to gently slip cord over head. If cord is tight,
 - 2) Clamp in two places (approximately 2" apart) and cut between clamps.
2. Suction infant's oropharynx and then nasopharynx.²
3. Note time of delivery.
4. Keep infant warm and dry.
5. Stimulate infant.
6. If the infant does not require resuscitation, keep the infant at or below the level of the mother while drying and warming and delay clamping the cord for at least one minute.
7. Clamp and cut cord 4 finger widths (4-6 inches) from infant.
8. Assess and record APGAR scores at 1 and 5 minutes after delivery.
9. Deliver and preserve placenta (**DO NOT** pull on cord or placenta).³
10. Monitor vital signs and reassess
11. Transport

C. Complicated delivery: (mother with unstable vital signs, arm or leg presentation, prolapsed umbilical cord, shoulder dystocia, excessive bleeding concerning for placenta previa, or breech delivery)

1. Prepare for immediate emergent transport.
2. Handle delivery based upon complications, as follows:

- a. If breech presentation with spontaneous delivery of the buttocks and trunk, attempt to gently deliver head, but **DO NOT** pull infant. If head does not deliver easily, placed gloved fingers into the vagina and provide a space between the vaginal wall and the infant's mouth/nose to allow air passage.
- b. If prolapsed cord, elevate the mother's pelvis (may elevate pelvis with pillows or place mother in knee/chest position) place gloved hand into vagina and gently push infant's head up into uterus to prevent compression of cord.
- c. If limb (single arm or leg) presentation, transport immediately and emergently.
- d. If head delivers but shoulders do not:
 - 1) Push mother's knees up to her shoulders.
 - 2) Have another provider apply abdominal pressure above the pubic bone.
 - 3) Attempt to gently deliver shoulders.
3. Transport immediately and emergently, if suggested maneuvers are not successful.
4. Contact medical command as soon as possible after complicated delivery conditions are identified to discuss transport to the closest facility with a licensed obstetrical care unit. Contact receiving hospital prior to transport to allow time for facility to prepare for patient care.
5. Monitor vital signs and reassess.

D. Newborn Care:

1. **For depressed newborn proceed to Newborn/Neonatal Resuscitation Protocol # 333.**

APGAR SCORING CHART			
Clinical Signs	Zero	One	Two
A = Appearance (Color)	Blue, pale	Body pink, Extremities blue	All pink
P = Pulse (Heart Rate)	Absent	<100	>100
G = Grimace (Irritability) ¹	No response	Grimace or weak cry	Cough/ sneeze or withdraws foot and cries
A = Activity (Muscle Tone)	Limp	Some flexion of arms and/or legs	Well flexed
R = Respiratory effort	Absent	Slow respirations	Strong cry

¹Response to catheter in nostril (tested after pharynx is cleared) or finger snap against sole of foot.

Notes:

1. On scene time may be delayed up to 20 minutes while awaiting infant delivery if:
 - a. Patient has signs of crowning or urge to push/ frequent contractions < every 2 minutes.
 - b. Infant is not expected to be premature (i.e. delivery is within 3 weeks of due date or 37 weeks estimated gestational age)
 - c. Delivery is not complicated by prolapsed cord, limb presentation, breech birth, or failure to progress (i.e. head has delivered but shoulders do not deliver).
2. Initial suctioning may be done as soon as head delivers.
3. If mother and infant are stable, transport may be delayed for up to 20 minutes for delivery of placenta.

Performance Parameters:

- A. Review documentation of assessment for imminent delivery.
- B. Review for documentation of neonatal assessment using APGAR scores.

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**AGITATED BEHAVIOR / PSYCHIATRIC DISORDERS
STATEWIDE BLS PROTOCOL**

Criteria:

- A. Patient with a psychiatric or behavioral disorder who is at imminent risk of self-injury or is a threat to others.

OR

- B. Patient with a medical condition causing agitation and possibly violent behavior. Examples of these conditions are:
1. Alcohol or drug (e.g. PCP, methamphetamine, cocaine) intoxications
 2. Hypoglycemia
 3. Stroke
 4. Drug overdose
 5. Post-ictal after seizure
 6. Head trauma

Exclusion Criteria:

- A. None

Treatment:**A. All patients:**

1. If violence or weapons are anticipated, consider waiting for law enforcement to secure the scene. **Do not block patient's exit** – See Scene Safety Protocol # 102.
2. Initial Patient Contact – see Protocol # 201.
 - a. Call for law enforcement, if available, if patient is violent
 - b. Call for ALS, if available, if patient has altered LOC or is agitated. Agitated delirium – a condition of agitated fighting against restraints without being aware of actions – can lead to death. See Indications for ALS Use protocol #210
3. Assess for possible underlying medical conditions such as hypoxia, hypoglycemia, alcohol or drug intoxication, stroke, seizure, traumatic brain injury, or delirium with agitated behavior.
 - a. If present, use the applicable protocol.
4. Maintain the patient's dignity to the extent possible, including **using** the least restrictive method of restraint that protects the patient, the public, and the emergency responders from harm. The use of de-escalation techniques should take precedence over physical restraint or pharmacologic management whenever possible. Attempt to establish a rapport with the patient.¹
5. At all times, the EMS provider must act as an advocate for the safety, medical monitoring, and clinical care of the patient.
6. If patient is a potential threat to him/herself or others and restraint can be accomplished safely by personnel on scene, the patient may be restrained (see procedure below) and transported against his/her will in a patient that lacks decision-making capacity.
 - a. Restrain an agitated patient in the following situations:
 - 1) To protect a patient, the public, and emergency responders from further injury, facilitate assessment, or allow for treatment of life-threatening injury or illness in a patient that lacks decision-making capacity.
 - 2) When a mental health delegate on scene has initiated involuntary commitment papers (i.e. 302)
 - 3) When a medical command physician orders restraint and transport
 - 4) The patient is a direct threat to EMS providers and must be restrained to avoid injury.
 - 5) The patient exhibits suicidal thoughts or actions.
 - b. If the providers are in danger of harm, they should retreat to a safe place and await the arrival of law enforcement.
7. If the patient struggles violently against the restraints,
 - a. Call for ALS if available²
 - b. Administer high concentration oxygen via NRB mask.
8. Contact medical command for an order to restrain and transport the patient against his/her will, if not done previously.

9. Transport

- a. Restraints during transport should restrict the patient enough to reasonably prevent escape from the vehicle or harm to EMS providers.
- b. EMS providers must **be remain** with a patient at all times if the individual was restrained using this protocol.

1) This does not require the crew to remain with a patient who has defeated the restraints and is physically assaulting them. An immediate request for additional resources (law enforcement and/or EMS) should be placed in this circumstance.

10. Monitor vital signs and reassess

- a. Reassess and document neurovascular function of restrained extremities.

Procedure for patients that require physical restraint:**A. All Patients:**

1. Use the minimum amount of restraint necessary to safely accomplish patient care and transportation with regard to the patient's dignity.
2. Assure that adequate personnel are present, and that police assistance has arrived, if available, before attempts to restrain patient.
3. Call for ALS, if available, if patient continues to struggle against restraint.²
4. Restrain all 4 extremities with patient supine on stretcher.^{3,4,5,6}
 - a. If the patient is handcuffed by law enforcement officers, consideration should be made to transition to the least restrictive restraints that are safe for the patient and responders.
5. Use soft restraints to prevent the patient from injuring him or herself or others.⁷
 - a. If the patient is handcuffed by law enforcement officers, consideration should be made to transition to the least restrictive restraints that are safe for the patient and responders.
 - b. Physical restraint devices that are easily removed by providers without a key are preferred. However, if a patient is restrained in devices that require a key, the key must accompany the patient during treatment and transportation.
 - c. If the handcuffs or law enforcement devices are used to restrain the patient, a law enforcement officer **with a key or release mechanism** must remain immediately available while the EMS provider assesses and manages the patient and should accompany the patient during transport by ambulance.
 - d. If soft restraints are used, it is still preferable that a law enforcement officer follows the ambulance in a patrol car to the receiving facility.
6. Do not place restraints in a manner that may interfere with evaluation and treatment of the patient or in any way that may compromise patient's respiratory effort.⁸
7. If the patient is spitting, may cover his/her face with a surgical mask or with a NRB mask with high flow oxygen.⁹
8. After physical restraint, **available** physiologic **continuous** monitoring and clinical assessment/reassessment of respiratory and hemodynamic status as well as neurovascular status of all restrained extremities must be done as soon as possible and at recurring intervals. **(no less than every five minutes: these patients are considered critical).**
9. Document care, including details of patient behavior, patient assessment, clinical indication for restrain, type of restrain intervention(s) attempted or applied, frequency of reassessment and associated exam findings, and additional care provided during transport.
10. Contact medical command for restraint order if physical restraint is needed. If required for safety of the patient, public or responders, the call to medical command can occur after the patient is physically restrained.

Possible Medical Command Orders:

- A. Medical command may order restraint and transport of a patient against his/her will if the patient lacks capacity.

Notes:

1. Verbal techniques include:
 - a. Direct empathetic and calm voice.
 - b. Present clear limits and options.
 - c. Respect personal space.
 - d. Avoid direct eye contact.

- e. Non-confrontational posture.
2. There is a risk of serious complications or death if patient continues to struggle violently against restraints. Sedation by ALS providers may be indicated in some circumstances as directed by ALS protocols or by order from medical command physician.
 3. Initial “take down” may be done in a prone position to decrease the patient’s visual field and ability to bite, punch, and kick. After the individual is controlled, he/she should be restrained to the stretcher or other transport device in the supine position.
 4. **DO NOT restrain patient with hands and feet tied behind the back or prone position.**
 5. **DO NOT** restrain patient with techniques that constrict the chest. For example do not sandwich patient between devices, such as long boards or Reeve’s stretchers, for transport. Avoid restraint to unpadded devices like backboards.
 6. A stretcher strap that fits snugly just above the knees is effective in decreasing the patient’s ability to kick.
 7. Padded or leather wrist or ankle straps are appropriate. Rigid restraints, such as handcuffs, should not be used by EMS providers. Handcuffs and plastic ties are not considered soft restraints.
 8. Never apply restraints near the patient’s neck or apply restraints or pressure in a fashion that restricts the patient’s respiratory effort.
 9. Never cover a patient’s mouth or nose except with a surgical mask or a NRB mask with high flow oxygen, surgical mask or specially designed shield (i.e. “Spit-Sack”). A NRB mask with high flow oxygen may be used to prevent spitting in a patient that also may have hypoxia or another medical condition causing his/her agitation, but a NRB mask should never be used to prevent spitting without also administering high flow oxygen through the mask.
-

Performance Parameters:

- A. Review for documentation of reason for restraint and restraint method used. Consider reviewing every call when physical restraint is used.
- B. Hospital-operated EMS agencies may have additional accreditation requirements for documentation.
- C. Review for documentation of frequent reassessment of vital signs, cardiopulmonary status, and neurovascular status of restrained extremities. Consider benchmark of documenting these items at least every 15 minutes.

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POISONING/TOXIN EXPOSURE (INGESTION / INHALATION / ABSORPTION / INJECTION / ENVENOMATION)**STATEWIDE BLS PROTOCOL****Criteria:**

- A. Patient who has accidentally or purposefully been exposed to toxic substances. Including:
 - 1. Ingested toxins
 - a. For example, pills, capsules, medications, recreational drugs, poisonous plants, strong acids or alkali household or industrial compounds
 - 2. Inhaled toxins
 - a. For example, carbon monoxide and other toxic gases
 - 3. Absorbed toxins
 - a. For example, substances on skin or splashed into eyes
 - 4. Injected toxins
 - a. For example, snake/spider bites or substances injected through the skin
- B. Patient with suspected narcotic overdose who may have symptoms of unresponsiveness, decreased respiratory effort, pinpoint pupils, history of narcotic ingestion or fentanyl patches on skin.

Exclusion Criteria:

- A. None

System Requirements:

- A. Only an EMR or EMT that has completed the Naloxone Administration for EMR and EMT course (CE course #007622) on the Learning Management System may administer naloxone. The EMR or EMT should also receive psychomotor training/ experience with the use of the BLS naloxone delivery device used by the EMS agency.
- B. EMRs and EMTs may only administer naloxone by intranasal or autoinjector routes.
- C. **[Optional]** BLS agencies (QRS or ambulance) may carry naloxone for administration by the agency's EMR/EMTs.
 - 1. These agencies must comply with Department of Health naloxone requirements for these agencies and for the training of agency providers before the agency is permitted to stock and carry naloxone.
 - 2. The EMS agency medical director must oversee the carrying and use of naloxone.
 - 3. The EMS agency or medical director may require psychomotor training in the use of the naloxone administration device.

Treatment:**A. All patients:**

- 1. Initial Patient Contact – see Protocol # 201.
 - a. **WARNING: EMS providers must not enter confined spaces with potential toxic gases (e.g., manure pits, silos, spaces with carbon monoxide, spaces with industrial gases) unless providers have proper training and PPE.**
 - b. If toxic exposure/ overdose is the result of intentional behavior- also see Behavioral Emergency/ Patient Restraint protocol #801.
- 2. Maintain adequate airway and ventilate if needed (two-person two-thumbs-up BVM technique preferred).
- 3. Administer high concentration oxygen, if altered level of consciousness, shortness of breath, abnormal respiratory rate, or patient coughing.
- 4. Monitor pulse oximetry – See Pulse Oximetry Protocol #226
- 5. Consider call for ALS if available, particularly for decreased LOC. See Indications for ALS Use protocol #210.
- 6. Determine:
 - a. What – identify specific toxin and amount, if possible.
 - 1) If possible, safely transport source of toxin (e.g. prescription pill bottles) with patient to receiving facility.
 - 2) EMS vehicles should not transport dangerous items (e.g. toxic chemicals that are not sealed in their original containers, live snakes, etc....)

- 3) Photographs can be carried with the crew and/or distributed through appropriate channels to Medical Command. Attempt to avoid photographing protected health information and only store and distribute such photographs in a secure HIPAA compliant fashion. All such pictures should be achieved with the PCR and only distributed to members of the care team. They should be destroyed as soon as archived in the ePCR program.
 - b. When – identify time of exposure, if possible.
 - c. Why – identify reason for exposure, if possible.
 - d. Where – identify environmental site issues (e.g. exposure in a confined space or carbon monoxide present).
7. Give **naloxone** (if available) if decreased respiratory rate and suspected narcotic overdose
Goal = adequate respiration and oxygenation (not awakened patient).
 - a. Ventilation with BVM takes priority over naloxone administration. **SAFETY NOTE: If cyanotic, decreased respirations, or hypoxia (SpO₂ < 95%), ventilate with BVM and oxygen to adequate color/SpO₂ while preparing for administration of naloxone**
 - b. In pulseless patients, naloxone is not indicated, and CPR should be initiated immediately.
 - c. Administration options:
 - 1) Initial naloxone dose:
 - a) Naloxone, 2 mg intranasal prefilled kit with atomizer (1 mL in each nostril), or
 - b) Naloxone, 2 mg or 4 mg prefilled commercial naloxone nasal device, or
 - c) Naloxone, 0.4 mg intramuscular by autoinjector
 - 2) If respiratory effort not normal after 5 minutes, may repeat above dose once.
 - 3) If inadequate spontaneous ventilation after repeat dose of naloxone by any route, efforts should be focused on adequate BVM ventilation, oxygenation, and transport.
 - d. CAUTION: Patients that receive naloxone may have rapid onset of withdrawal symptoms, including agitation, vomiting, and violent behavior.
 - e. CAUTION: Naloxone half-life is 30-90 minutes and respiratory depression may recur when naloxone wears off.
 - f. EMR and EMT may not administer naloxone by intravenous, intramuscular (**without except** autoinjector), or endotracheal methods.
8. Do not give anything by mouth to a patient with an altered level of consciousness or an unconscious patient.¹
9. Treat specific toxins based upon the appropriate category:
 - a. **Ingested Toxins.** Treat all exposures as follows:
 - 1) **DO NOT INDUCE VOMITING.**
 - 2) Poison Control Center or Medical Command for possible order for activated charcoal (if available).^{2,3,4}
 - a) EMS providers must follow instructions from Poison Control Center unless the orders are superseded by orders from a medical command physician. These instructions must be documented on the PCR.
 - b. **Inhaled Toxins.** Treat all symptomatic (e.g. SOB, cough, headache, decreased LOC) patients as follows:
 - 1) Only personnel with proper training and wearing proper PPE should enter environments that may have toxic gases.
 - 2) Remove patient from environment.
 - 3) Ventilate, if needed.
 - 4) Administer 100% oxygen.
 - a) **WARNING: Pulse oximetry monitors give false readings in patients that have been exposed to carbon monoxide or cyanide, (includes all smoke inhalation patients) and these devices should never not be used to titrate oxygen in these patients. Refer to protocol 226, Oxygen administration**
 - c. **For Absorbed Toxins:**
 - 1) Remove contaminated clothing.
 - 2) If dry substances are present, with appropriate PPE, manually remove and brush all remaining powder and residue from skin and clothing⁵ and then flush area with copious amounts of room temperature water.
 - 3) ~~Flush affected area copiously.~~

- 4) Liquid substance - Irrigate with copious amounts of room temperature water. Do not contaminate uninjured areas while flushing.
 - a) ~~Dry substances - With gloves and appropriate PPE, brush remaining powder from skin and clothing, then irrigate with copious amounts of water.⁵~~
 - 5) Eyes- Flush affected eyes continuously with water or saline if eye exposure.
- d. **For Injected Poisons/ Envenomation/ Snakebite:**
- 1) Identify type of snake or animal (e.g. scorpion), if safe and possible. If identity of a snake is not known, all victims of snakebite should be treated as if the snake is poisonous. Do not delay transport while attempting to capture or kill a snake.
 - 2) Calm patient.
 - 3) Administer high-flow oxygen, if respiratory symptoms are present.
 - 4) Remove jewelry and tight clothing.
 - 5) Consider immobilizing the involved body part. If extremity involved, keep the extremity at a neutral level to the patient's heart (neither elevate or lower the extremity).
 - 6) Keep the patient as still as possible to reduce the circulation of the venom. Carry patient for transport, if possible.
 - 7) Apply constricting band proximal to bite if patient is hypotensive.
 - 8) **DO NOT APPLY ICE.**
10. Transport.
 11. Monitor vital signs and reassess.
 12. Contact Medical Command or Poison Control Center² if additional direction is needed.

Possible Medical Command Orders:

- A. Administration of activated charcoal (if available) may be ordered ^{3,4}:
1. **Adults:** 25 - 50 gm orally of pre-mixed activated charcoal.
 2. **Children:** 1 gm/ kg orally or approximately 12.5 - 25 gm orally of pre-mixed activated charcoal.

Notes:

1. Contact Poison Control Center or Medical Command before administering anything by mouth.
2. National **Poison Control Center Phone number is 800-222-1222**. EMS providers must follow instructions from Poison Control Center unless the orders are superseded by orders from a medical command physician. These instructions must be documented on the PCR.
3. Activated charcoal (if available) may only be given by order of medical command or poison control.
4. Contraindications to charcoal:
 - a. Patient unable to swallow/protect airway.
 - b. Seizures.
 - c. Hydrocarbons ingestion (e.g. turpentine)
 - d. Caustic substance ingestion (e.g. liquid drain cleaner or milk pipe cleaner)
5. Note- some substances, like dry lime will cause a heat-producing reaction when mixed with water. Copious water should be available before beginning to irrigate.

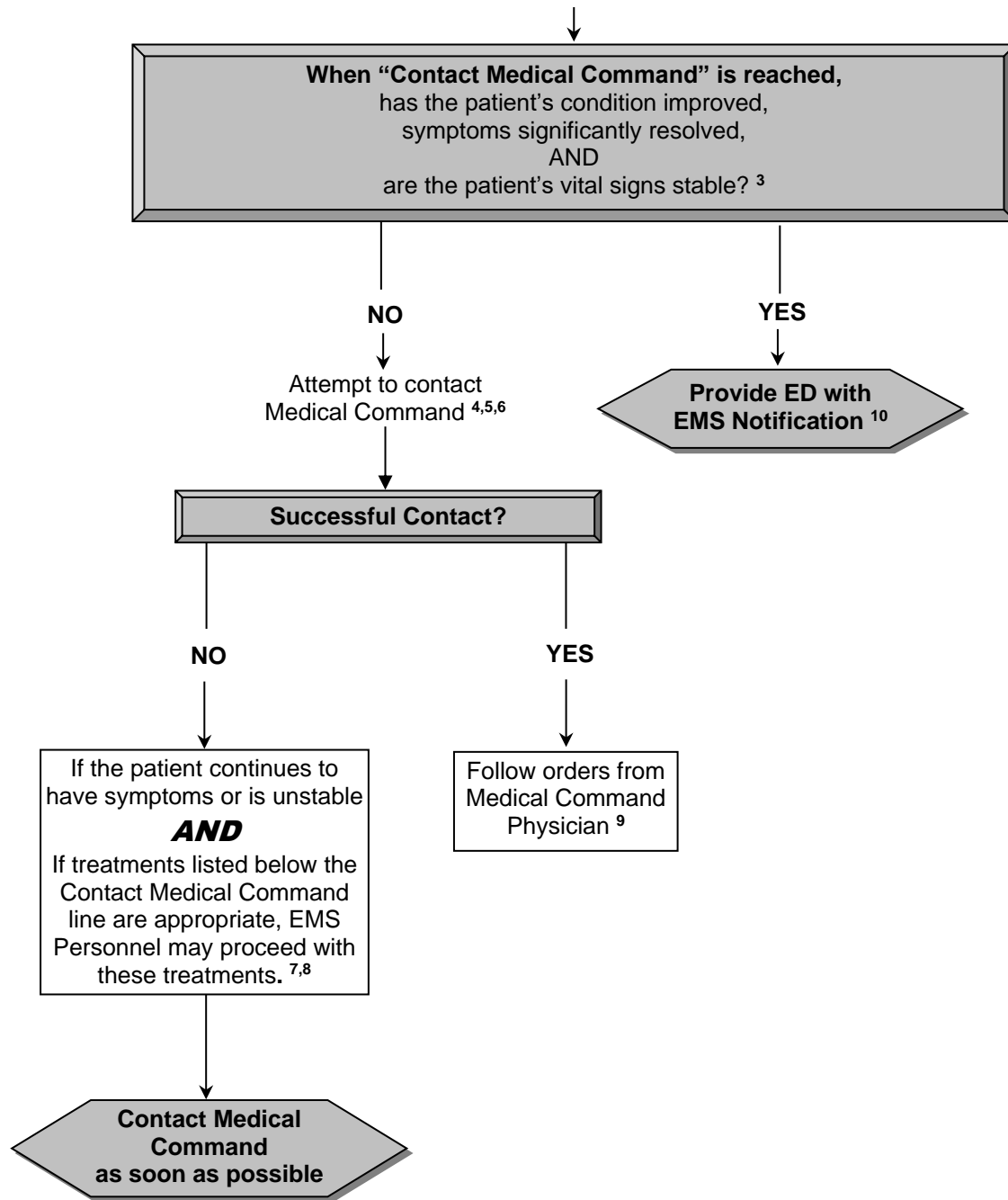
Performance Parameters:

- A. Review for documentation of orders received from Poison Control Centers or Medical Command.

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MEDICAL COMMAND CONTACT STATEWIDE BLS PROTOCOL

Follow Appropriate Protocol ^{1,2}



MEDICAL COMMAND CONTACT STATEWIDE BLS PROTOCOL

Purpose of Medical Command contact:

- A. By the Pennsylvania EMSS Act and its regulations, EMS providers will provide care within their scope of practice and will follow Department of Health-approved protocols or Medical Command orders when delivering EMS care.
 1. A Medical Command Physician cannot order an EMS provider to exceed their scope of practice as defined in the EMS Act and Pennsylvania Bulletin.
- B. ~~Medical Command must order any ALS treatment (medication or procedure) that an EMS provider provides when that~~ Treatment that is not included in or is a deviation from the Department-approved protocols ~~must be ordered by a Medical Command Physician~~. This applies to all ~~ALS EMS~~ care, including interfacility transport.
 1. Interfacility transport care that is regulated by the Nursing Practice Act or Medical Practice Act is excluded from these protocols.
- C. In certain circumstances, as defined by the Statewide ~~BLS EMS~~ Protocols ~~at all levels~~, medical command must be contacted by EMS ~~(BLS or ALS)~~ providers.
- D. Protocols cannot adequately address every possible patient scenario. The Pennsylvania EMS System provides a structured Medical Command system so that EMS providers can contact a Medical Command Physician when the providers are confronted with a situation that is not addressed by the protocols or when the EMS providers have any doubt about the appropriate care for a patient.
- E. In some situations, and geographic locations, it is not possible for an EMS provider to contact a medical command physician. In some protocols, there are accommodations for additional care when a medical command facility cannot be contacted.
- F. The protocol section entitled “Possible Medical Command Orders” are intended to educate EMS providers to the possible orders that they may receive, and as a resource to medical command physicians. Medical command physicians are not obligated to provide orders consistent with these “possible orders”. **Interventions listed under “Possible Medical Command Orders” may ONLY be done when they are ordered by a medical command physician. These possible treatments should not be done in situations where medical command cannot be contacted.**
- G. Contact with medical command may be particularly helpful in the following situations:
 1. Patients who are refusing treatment
 2. Patients with time-dependent illnesses or injuries who may benefit from transport to a specific facility with special capabilities (e.g., acute stroke, acute ST-elevation MI)
 3. Patients with conditions that have not responded to the usual protocol treatments.
 4. Patients with unusual presentations that are not addressed in protocols.
 5. Patients with rare illnesses or injuries that are not frequently encountered by EMS providers.
 6. Patients who may benefit from uncommon treatments (e.g., unusual overdoses with specific antidotes).
- H. An EMS agency medical director may require more frequent contact with medical command than required by protocol for ALS providers who have restrictions on their medical command authorization. EMS agency medical directors that want medical command to be contacted on every call must do this in conjunction with local medical command facilities or within a regional plan.

Purpose of facility “EMS Notification”:

- A. If a patient’s condition has improved and the patient is stable, interventions from a medical command physician are rarely needed, and contact with the medical command physician is disruptive to the physician’s care of other patients.

- B. When medical command is not required or necessary, regional policy may require that the receiving facility should still be notified if the patient is being transported to the Emergency Department. This “EMS notification” should be provided to the facility by phone or radio, and may be delivered to any appropriate individual at the facility.
- C. An “EMS Notification” should be a short message that includes the ambulance identifier or designation, the patient age/gender, the chief complaint or patient problem, and whether the patient is stable or unstable.
- D. “EMS Notification” is not necessary when a patient is not being transported to the receiving facility’s Emergency Department (e.g., Inter-facility transfer to an acute care facility when the patient is a direct admission to an inpatient floor).
 - 1. **Unscheduled arrivals such as to the obstetrics unit for active labor or evaluation of an acute problem should be called as EMS Notifications.**
- E. Providing “EMS Notification” to the ED may allow a facility to be better prepared for a patient arriving by ambulance and may decrease the amount of time needed to assign an ED bed to an arriving patient.

Notes:

1. You may contact medical command regardless of your position in the protocol if you need advice or direction in caring for the patient. Medical command should be contacted for orders if a patient requiring interfacility transport needs a medication/ treatment that is not included above the contact medical command line in any Department-approved protocol.
2. When in doubt, contact medical command.
3. For example, a patient with chest pain may have almost complete resolution of pain after oxygen, aspirin, and several nitroglycerin AND may have normal vital signs.
4. Regional policy may determine the preferred method of medical command contact/ EMS notification.
5. Cellular technology may be utilized but all EMS ambulances must maintain the ability to contact medical command by radio also.
6. **If the receiving facility is also a medical command facility, the initial medical command contact should be made to the receiving facility.** For Category 1 and 2 trauma patients, the receiving or closest trauma center should be contacted for medical command if possible (see Protocol #180). If the receiving facility cannot be contacted, an alternate facility may be contacted. The medical command physician at the alternate facility is responsible for relaying the information to the receiving facility.
7. Procedures or treatments listed after the medical command box may be considered and performed at the discretion of the **ALS** provider if unable to contact medical command if the ALS provider believes that these treatments are appropriate and necessary.
8. Attempts to contact medical command must be documented on the PCR, and the provider should document the reasons for continuing with care below the medical command box. Only mark the Medical Command section of the PA PCR if you sought Medical Command.
9. Every time medical command was contacted, the EMS provider must document the medical command facility, the medical command physician, and the orders received.
10. If patient condition worsens after EMS notification, contact medical command.

Performance Parameters:

- A. 100% audit of cases where treatments beyond the “contact medical command” box were performed after unsuccessful contact with medical command.
- B. Documentation of medical command facility contacted, medical command physician contacted, and orders received in every case where medical command is contacted.

- C.** Review of cases for appropriate contact with medical command when required by certain protocols (e.g. acute stroke symptoms, refusal of treatment, Non-Treatment and/or Non-Transport of Patient etc...), when patient's condition does not improve with protocol treatment, and when patients are unstable.
- D.** Review of cases for appropriate use of EMS notification, and inappropriate use of medical command contact for stable patients whose symptoms were alleviated by protocol treatments.

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**ON-SCENE PHYSICIAN / RN
STATEWIDE BLS PROTOCOL****Criteria:**

- A. At the scene of illness or injury, a bystander identifies himself or herself as a licensed physician or registered nurse and this healthcare practitioner wants to direct the care of the patient.

OR

- B. At the scene of an incident, a medical command physician wants to provide on-scene medical command.

Exclusion Criteria:

- A. None

Procedure**A. When a bystander at an emergency scene identifies himself/herself as a physician:**

1. Ask to see the physician's identification and credentials as a physician, unless the EMS provider knows them.
2. Inform the physician of the regulatory responsibility to medical command.
3. Immediately contact medical command facility and speak to the medical command physician.
4. Instruct the physician on scene in radio/phone operation and have the on-scene physician speak directly with the medical command physician.
5. The medical command physician can:
 - a. Request that the physician on scene function in an observer capacity only.
 - b. Retain medical command but consider suggestions offered by the physician on scene.
 - c. Permit the physician on scene to take responsibility for patient care. **NOTE: If the on-scene physician agrees to assume this responsibility, they are required to accompany the patient to the receiving facility in the ambulance if the physician performs skills that are beyond the scope of practice of the EMS providers or if the EMS providers are uncomfortable following the orders given by the physician.** Under these circumstances, EMS providers will:
 - 1) Make equipment and supplies available to the physician and offer assistance.
 - 2) Ensure that the physician accompanies the patient to the receiving facility in the ambulance.
 - 3) Ensure that the physician signs for all instructions and medical care given on the patient care report. Document the physician's name on the ePCR.
 - 4) Keep the receiving facility advised of the patient and transport status. Follow directions from the on-scene physician unless the physician orders treatment that is beyond the scope of practice of the EMS provider.

B. When a bystander at an emergency scene identifies himself/herself as a registered nurse:

1. Ask to see evidence of the nurse's license and prehospital credentials, unless the EMS provider knows them.
2. Inform the nurse of the regulatory responsibility to medical command.
3. An RN may provide assistance within their scope of practice or certification level at the discretion of the EMS crew when approved by the medical command physician.

C. When a medical command physician arrives on-scene as a member of the EMS agency's routine response:

1. The medical command physician may provide on-scene medical command orders to providers of the EMS agency if all of the following occur:
 - a. The EMS agency has a prearranged agreement for the medical command physician to respond and participate in on-scene medical command, and the EMS agency medical director is aware of this arrangement.
 - b. The medical command physician is an active medical command physician with a medical command facility that has an arrangement with the EMS agency to provide on-scene medical command.
 - c. All orders given by the on-scene medical command physician must be documented either on the ePCR for the incident or on the medical command facility's usual medical command form. This documentation must be kept in the usual manner of the medical command facility and must be available for QI at the facility.
 - d. The EMS providers must be able to identify the on-scene medical command physician as an individual who is associated with the agency to provide on-scene medical command.
2. If a medical command physician who is not associated with the EMS agency arrives on-scene and offers assistance, follow the procedure related to bystander physician on scene (Procedure section A).

TRANSPORTATION OF SERVICE ANIMALS GUIDELINES

Purpose:

The purpose of this policy is to provide guidance to EMS providers who encounter individuals who are assisted by service animals, including guide dogs for the visually impaired and other types of service animals. However, because of the nature of the services we provide it can sometimes be difficult to accommodate a patient and a service animal in an ambulance.

EMS providers should be guided by this policy in determining whether service animals should be transported with the individual in the ambulance or wheelchair van, or whether alternate methods of transporting the service animal should be utilized.

Criteria:

- A. Any call involving a patient with service animals.

Exclusion Criteria:

- A. None.

Procedure**A. All Patients with Service Animals:**

1. Service animals, for example, guide dogs utilized by visually impaired persons, shall be permitted to accompany the patient in the ambulance or wheelchair van unless the presence of the service animal will disrupt emergency or urgent patient care or there is some basis for the crew members to believe that the safety of the crew, the patient or others would be compromised by the presence of the service animal in the ambulance or wheelchair van
2. EMS providers should assess the level of care required to provide competent medical attention to the patient.
3. When the presence of a service animal in the ambulance might interfere with patient care, jeopardize the safety of the crew, the patient or others, or cause damage to the ambulance or equipment, providers should make other arrangements for simultaneous transport of the service animal to the receiving facility. Unless emergency conditions dictate otherwise, absolutely every effort must be made to reunite the patient with the service animal at the time of the patient's arrival at the hospital or other destination.
4. Acceptable alternative methods of transporting a service animal to the receiving facility include, but are not necessarily limited to, family members, friends or neighbors of the patient, or a law enforcement official. Attempt to obtain and document the consent of the patient for transport of the service animal by such person. If no such individuals are available, contact the agency base or PSAP and request that additional manpower respond to transport the service animal.
5. Providers should document on the patient care report instances where the patient utilizes a service animal, and should document on the patient care report whether or not the service animal was transported with the patient. If the service animal is not transported with the patient, a separate incident report should be maintained by the EMS agency describing the reasons that the service animal was not transported with the patient.

Notes:

1. EMS agencies in PA provide quality services to all individuals regardless of race, color, national origin, sex, disability, or creed, and comply with all applicable state and Federal laws regarding discrimination and access to public accommodations.

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CIVIL DISTURBANCE CONSIDERATIONS GUIDELINES

Criteria:

- A.** These guidelines contain considerations for EMS operations during civil disturbances. These may be helpful as EMS agencies plan for and respond to a civil disturbance.
- B.** Civil disturbances can provide unique challenges for EMS providers and agencies, including those related to:
 - 1. Safety of patients, providers, other first responders and the public
 - 2. Interoperability of communications between agencies and jurisdictions
 - 3. Multi-agency cooperation
 - 4. Limited options for patient treatment or transport
 - 5. Need for mass casualty care or mass decontamination
 - 6. Unfamiliar injury patterns
 - 7. Civilian/ non-affiliated demonstrator medical care
 - 8. Rapidly changing geographic response areas.

Exclusion Criteria:

- A.** These guidelines are not intended to supplant specialty Tactical EMS (TEMS) operational teams which may routinely accompany law enforcement civil disturbance response teams that are deployed
- B.** These are guidelines to assist EMS agencies in planning for EMS operations during a civil disturbance. They do not replace or supersede local interdisciplinary planning that should be done in each community.

Procedure:

A. Pre-planning:

- 1. Establish open communication with law enforcement, fire, and emergency management agencies. Be mindful that unencrypted radio communications may be monitored by the public and can be used with unlawful intent. At the same time, seamless communication must exist between EMS and law enforcement for EMS provider and patient safety.
- 2. Familiarize EMS providers with common law enforcement tactics and instruments used for crowd dispersal. Enhance EMS awareness of the associated injury patterns and treatments to include:
 - a. Chemical munitions
 - b. Less-lethal kinetic impact rounds
 - c. Electrical conductive weapons (e.g. Tasers)
- 3. Practice with law enforcement and TEMS team and identify challenges of the rescue task force model in a civil unrest environment
- 4. Prepare departmental continuity of operations plan (COOP)
- 5. Obtain and train in ballistic PPE to include body armor, helmets, and face shields
- 6. Recognize that demonstrators have become more sophisticated in their operations and may have enhanced PPE, decentralized command structures, and bring their own “street medics”

B. During times of heightened awareness for possible civil disturbance:

1. Consider having EMS personnel wear civilian clothing when going to and from EMS stations
2. Consider enhanced staff accountability measures
3. Enhance personal security and accountability of ID cards and access keys
4. Notify local hospitals and trauma centers of any potential threats and include them early in the planning and notification phase
5. Consider a family communication plan for personnel and their families
6. Recognize typical geographic areas of mass gatherings (courthouse, city hall, police station, stadium, etc.) and establish casualty collection points
7. Maintain heightened situational awareness. Keep supplies on-hand for 72 hours of self-sustainment including food, change of clothes (civilian and uniform), and any necessary medications

C. During a civil disturbance:**1. Personnel**

- a. Provide emotional support for first responders and their families
- b. Work in pairs or teams
- c. Maintain full accountability of all personnel and staff at all times
- d. Designate rally points should apparatus or stations need to be abandoned and communicate those to personnel. These may change due to situational changes.

2. Stations and Vehicles

- a. Secure and lock parking areas
- b. Remove nonessential equipment from exterior vehicle compartments and keep them locked
- c. Roll up windows and tape to limit flying glass
- d. Keep water and fuel tanks full
- e. If a station needs to be abandoned, remove all communications equipment, vehicles, equipment, and medications

3. Clinical Considerations

- a. Beware of injury patterns that do not match the history of the injury
- b. Consider mitigation strategies such as:
 - 1) Immediate removal of injured patients into the cold zone
 - 2) Treat in place without transport for minor injuries
 - 3) Minimize scene time by treating enroute
- c. Consider use of EMS physicians / TEMS resources for force protection and treat in-place/ no transport options

4. Operations

- a. Recognize civil disturbance can have a rapidly changing geographic footprint and safe casualty collection points can be rapidly compromised
- b. Recognize scene safety is paramount for EMS providers and patient self-transport to definitive healthcare may be the only option

- c. Recognize typical geographic areas of mass gatherings (courthouse, city hall, police station, stadium, etc.) and establish casualty collection points
- d. Be prepared to engage with HAZMAT for mass decontamination operations
- e. Modify department operations based on perceived threat or actual risk:
 - 1) Consider modified response protocols to minimize vehicle dispatch
 - 2) Minimize equipment use as feasible
 - 3) Ensure continuous control over equipment used
- f. Establish response task force for entry into hot and warm zones. A possible task force structure could be:
 - 1) 2 law enforcement vehicles with 4 personnel per vehicle
 - 2) 1 staffed EMS transport vehicle
 - 3) 1 EMS supervisor
- g. Position vehicles to allow for rapid evacuation
 - 1) Back into position
 - 2) Maintain an evacuation lane
 - 3) Avoid dead ends / roadblocks
 - 4) Carefully position supply lines to avoid blocking streets
- h. Consider the use of heavy blocking vehicles and tow apparatus to create a safer scene
- i. Consider use of ballistic PPE for all calls
- j. Fire may be used as a weapon – consider positioning fire extinguishers within the cab of vehicles and issuing small personal fire extinguishers

References:

1. <https://nfa.usfa.fema.gov/pdf/efop/efo248668.pdf>
2. https://www.usfa.fema.gov/downloads/pdf/publications/templates_guidance_ems_mass_incident_deployment.pdf
3. https://www.usfa.fema.gov/downloads/pdf/publications/mitigation_of_occupational_violence.pdf

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CRIME SCENE PRESERVATION GUIDELINES

Criteria:

- A. Any EMS encounter with a location that is the suspected or potential scene of a crime.

Exclusion Criteria:

- A. The safety of the EMS providers is of paramount importance, and these guidelines do not come before the principles outlined in the Scene Safety Guidelines #102.
- B. These guidelines provide general information related to crime scene preservation. These guidelines are not designed to supersede an EMS agency's policy; however this general information may augment an agency's policy.
- C. These guidelines do not comprehensively cover all possible situation, and EMS provider judgment should be used when the EMS agency's policy does not provide specific direction.

Procedure

- A. **Follow direction of law enforcement providers who have authority over crime scenes.**
 - B. **Provide life saving measures:** ^{1, 2}
 - 1. Never cut through holes in clothing created by bullets or knives.
 - 2. Retain all clothing, place in a paper bag.
 - 3. When transporting a patient who may be dying, ascertain name and/or description of assailant, if possible.
 - C. **Consider wearing gloves for all patient care and other activities within the crime scene.**
 - D. **In cases of obvious death, DO NOT move the body:**
 - 1. Leave the scene the same way you entered.
 - 2. Leave the scene in the same condition as when you entered.
 - 3. Do not allow anyone to enter the scene until police arrive.
 - E. **Notify the investigating law enforcement officer of any alteration of the crime scene by EMS providers including:**
 - 1. Any movement of furniture, tables, etc., by providers.
 - 2. The original position of the items.
 - 3. If you turned on lights.
 - 4. What you touched, moved, etc.
 - F. **At an outdoor crime scene, do not disturb shoe prints; tire marks, shell casings, etc.**
 - 1. Limit movement at the crime scene.
 - 2. Attempt to keep others out of the area.
 - G. **Firearms/Weapons:**
 - 1. Do not move firearms (loaded or unloaded) unless it poses a potential immediate threat.
 - 2. Secure any weapon that can be used against you or the crew out of the reach of the patient and bystanders.
 - a. Guns should be handed over to a law enforcement officer if possible or placed in a locked space, when available.
 - 1) If necessary for scene security, safely move firearm keeping finger off of the trigger and hammer and keeping barrel pointed in a safe direction away from self and others.
 - 2) Do not unload a gun.
 - b. Knives should be placed in a locked place, when available.
 - 3. Do not clean or disturb a patient's hands (when involved with a firearm). Consider covering a patient's hands with a paper bag during treatment/transport.
 - H. **Listen for conversations overheard at the crime scene. Report any conversations to law enforcement officials.**
-

Notes:

- 1. Your first duty is to provide emergency medical care at the scene of an illness/injury.
- 2. Certain measures can be taken to assist law enforcement personnel in preserving a crime scene without jeopardy to the patient.

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**INDWELLING INTRAVENOUS CATHETERS / OTHER MEDICAL DEVICES
STATEWIDE BLS PROTOCOL**

Criteria:

- A.** Patients that have an “Indwelling intravenous catheter without medication running:” ¹
1. Includes any capped catheter that is inserted into a patient’s vein or artery including, but not limited to, saline/heparin locks, Broviac catheters, Hickman catheters, PICC lines, Mediports and arterio-venous dialysis catheters
- OR**
- B.** Patients that have a “Medication running that is part of the patient’s normal treatment plan:”
1. This includes medications and devices that the patient or his/her family has been taught to use and either have been managing by themselves or will manage by themselves at the transport destination. These devices or medications may require infrequent maintenance, but do not require regular nursing assessment or patient monitoring related to the medication that is being administered. Examples include, but are not limited to, transportation of a patient with an analgesic pump to home, rehabilitation, or nursing home.
- OR**
- C.** Patients that have a medical device as part of their ongoing treatment when the device will not require any monitoring or care by EMS providers during the transport:
1. This includes devices like wound vacuum drains, nephrostomy tubes, tube within chest for chronic pleural fluid drainage, Foley catheters, and other devices that will either be managed by the patient / patient’s family or by medical personnel who will only intermittently monitor the device.

Exclusion Criteria:

- A.** More temporary intravenous medications like crystalloid fluids, antibiotics, intravenous drip medications that require frequent monitoring and maintenance, or intravenous pumps that are not part of the patient’s long-term care plan. These excluded medications are usually initiated before inter-facility or tertiary care transfer rather than before transfer to home, rehabilitation or nursing home care.

Procedure:

- A. All Patients:**
1. BLS providers may transport patients who meet the criteria of this protocol. If the patient has other symptoms or signs that warrant ALS care, then call for ALS if available.
- B. Potential complications.** Handle as specified:
1. **Bleeding at insertion point:**
 - a. Apply direct, manual pressure using body fluid precautions and request assistance from ALS, if not controlled.
 2. **Leaking of fluids/medications:**
 - a. Clamp fluid line if possible and contact medical command.
 3. **Dislodged catheter:**
 - a. If no bleeding is present, tape securely in place and return to hospital ² or health care facility that can provide a replacement line. (Please note: it is normal for some mid-line and PICC catheters to extend several centimeters outside the skin.)
 4. **Pump malfunction:**

- a. Patients and/or family members, who have received proper education and training, should be allowed to troubleshoot alarms. Otherwise, request assistance from ALS or return to facility for intervention². Contact medical command for direction on disabling the pump until intervention is provided.
 5. **Infiltration or extravasation (leaking of fluid or blood into tissues characterized by pain and swelling at injection site):**
 - a. If possible, stop the infusion and return to the hospital ² or health care facility for evaluation and replacement of line. Request assistance from ALS as needed. Apply cold pack to infusion site.
 6. **Suspected medication overdose or adverse medication reaction:**
 - a. Contact medical command or request assistance from ALS, if indicated.
 7. **Inadvertent puncture or transection of line:**
 - a. Immediately clamp patient end of fractured line and cover with sterile dressing to prevent air embolus and reduce infection risk. Request assistance from ALS, if indicated, and return to facility² for removal and/or replacement.
-

Notes:

1. Definitions:
 - a. **Saline or heparin lock:** a short peripheral catheter (1-2") usually present in the hand or forearm intended for intermittent infusions. A small length of tubing may or may not be present between the hub of the catheter and the locking cap. Saline or heparin flushes are used to maintain patency.
 - b. **Midline catheter:** Midline catheters are 3 to 8-inch peripheral catheters that are becoming an increasingly popular alternative to both short peripheral and Central Venous Catheters (CVC's). Midline catheters are inserted via the antecubital fossa into peripheral veins (such as the proximal basilic or cephalic veins, or distal subclavian vein; they do not enter central veins. Midline catheters are composed of either silicone or a polyurethane-elastomer hydrogel. PICC catheters: Peripherally inserted CVCs (PICCs) provide an alternative to subclavian or jugular vein catheterization and are inserted into the superior vena cava by way of the cephalic and basilar veins of the antecubital space.
 - c. **Surgically implanted central catheters:** including Hickman, Broviac, Groshong, and Quinton, commonly are used to provide vascular access to patients requiring prolonged IV therapy (e.g., chemotherapy, home infusion therapy, hemodialysis). In contrast to percutaneously inserted CVCs, these catheters have a tunneled portion exiting the skin and a Dacron cuff just inside the exit site that helps hold them in place. Skin sutures may or may not be present.
2. If closer to the planned destination health care facility, contact medical command for assistance in determining the best destination for the patient **as the destination may not have the resources to correct the complication that occurred in route.**

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APPENDICES

	<u>Page</u>
APPENDIX A: APGAR Scoring Chart.....	A-2
APPENDIX B: Burn Chart - Rule of Nines	A-3
APPENDIX C: Glasgow Adult Coma Scale	A-4
Glasgow Pediatric Coma Scale	A-4
APPENDIX D: Rehabilitation Patient Tag	A-5
APPENDIX E: Heat Stress Index	A-6
APPENDIX F: NWS Windchill Chart	A-7
APPENDIX G: Pediatric Vital Signs	A-8
APPENDIX H: Remaining Oxygen Supply Table.....	A-9
APPENDIX I: DMIST Pennsylvania EMS Handoff Report.....	A-10
APPENDIX J: Pediatric Weight Conversion.....	A-11

APPENDIX A

APGAR SCORING CHART

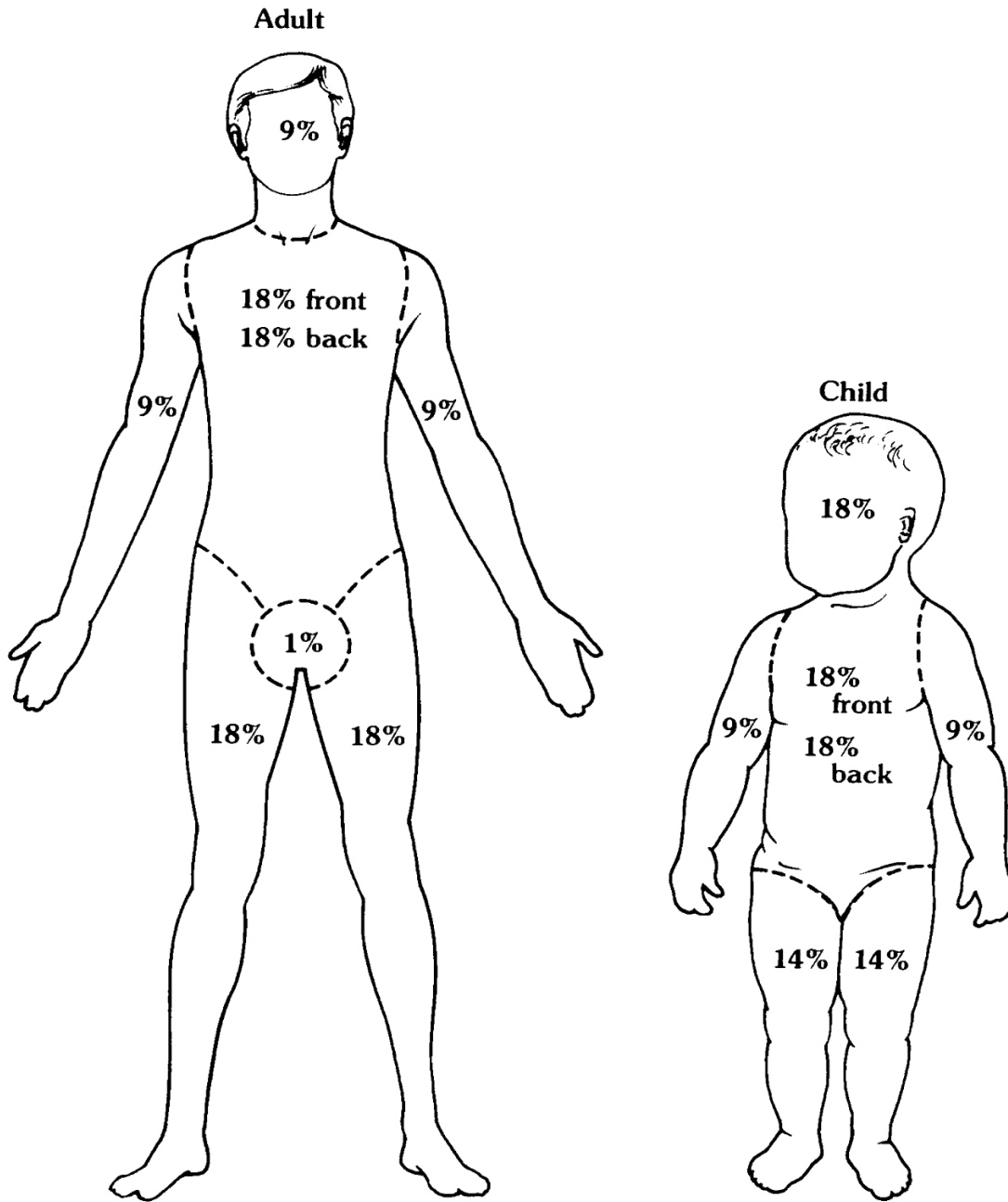
Clinical Signs	Zero	One	Two
A = Appearance (Color)	Blue, pale	Body pink, Extremities blue	All pink
P = Pulse (Heart Rate)	Absent	<100	>100
G = Grimace (Reflex Response) ^{1,2}	No response	Grimace	Cough, sneeze
A = Activity (Muscle Tone)	Limp	Some flexion of arms and/or legs	Well flexed
R = Respiratory effort	Absent	Weak cry, Hypoventilation	Strong cry

¹Response to catheter in nostril (tested after pharynx is cleared)

²Tangential foot slap

APPENDIX B

BURN CHART - RULE OF NINES



APPENDIX C

GLASGOW ADULT COMA SCALE

The Glasgow Coma Scale (based upon eye opening, verbal and motor response) is a practical means of monitoring changes in level of consciousness. If each response on the scale is given a number (high for normal and low for impaired responses), the responsiveness of the patient can be expressed by summation of the figures. The lowest score is 3; the highest is 15.

<u>GLASGOW COMA SCALE</u>	
<u>EYES OPEN:</u>	
Spontaneously	4
To verbal command	3
To pain	2
No Response	1
	Score (1 to 4) = <input style="width: 40px; height: 20px;" type="text"/>
<u>MOTOR RESPONSE:</u>	
<i>To verbal command:</i>	
Obeys	6
<i>Painful Stimulus ¹:</i>	
Localizes pain	5
Flexion-withdrawal	4
Flexion-abnormal (decorticate rigidity)	3
Extension (decerebrate rigidity)	2
No response	1
	Score (1 to 6) = <input style="width: 40px; height: 20px;" type="text"/>
<u>VERBAL RESPONSE ²:</u>	
Oriented, converses	5
Disoriented, converses	4
Inappropriate words	3
Incomprehensible sounds	2
No response	1
	Score (1 to 5) = <input style="width: 40px; height: 20px;" type="text"/>
GLASGOW COMA SCALE TOTAL SCORE (3 to 15) = <input style="width: 60px; height: 30px;" type="text"/>	
¹ apply knuckle to sternum, observe arms	
² arouse patient with painful stimulus if necessary	

GLASGOW PEDIATRIC COMA SCALE

EYES OPENING			
Score	> 1 Year	< 1 Year	
4	Spontaneously	Spontaneously	
3	To verbal command	To shout	
2	To pain	To pain	
1	No response	No response	
BEST MOTOR RESPONSE			
Score	> 1 Year	< 1 Year	
6	Obeys	Spontaneously	
5	Localizes pain	Localizes pain	
4	Flexion-withdrawal	Flexion-withdrawal	
3	Flexion-abnormal (decorticate rigidity)	Flexion-abnormal (decerebrate rigidity)	
2	Extension (decerebrate rigidity)	Extension (decerebrate rigidity)	
1	No response	No response	
BEST VERBAL RESPONSE			
Score	> 5 Years	2-5 Years	0-23 Months
5	Oriented & converses	Appropriate words & phrases	Smiles, coos appropriately
4	Disoriented & converses	Inappropriate words	Cries, consolable
3	Inappropriate words	Persistent cries and/or screams	Persistent inappropriate crying and/or screaming
2	Incomprehensible sounds	Grunts	Grunts, agitated/restless
1	No response	No response	No response

APPENDIX D

REHABILITATION PATIENT TAG

REHAB TAG		DATE:		
COMPANY:				
NAME:			AGE:	
ENTRY VITALS				
TIME	B/P	PULSE	RESP	TEMP
To Enter Medical	Systolic <90 or >160 Diastolic > 110	>100	>20	≥99.5 F ≥37.5 C
<input type="checkbox"/>	REHAB ONLY			
<input type="checkbox"/>	MEDICAL EVAL AND REHAB			
VITAL TAKEN AT 10 MINUTE INTERVAL (max)				
				RETAIN
TIME				
B/P				>160 Systolic < 100 Systolic > 90 Diastolic
PULSE				> 100
RESP				>20
TEMP				> 99.5 F >37.5 C
Taken By:				
DISPOSITION				
<input type="checkbox"/>	Return to Duty			
<input type="checkbox"/>	Off Duty			
<input type="checkbox"/>	Transport to a Hospital			
Rehab Officer:				
Time Released:				

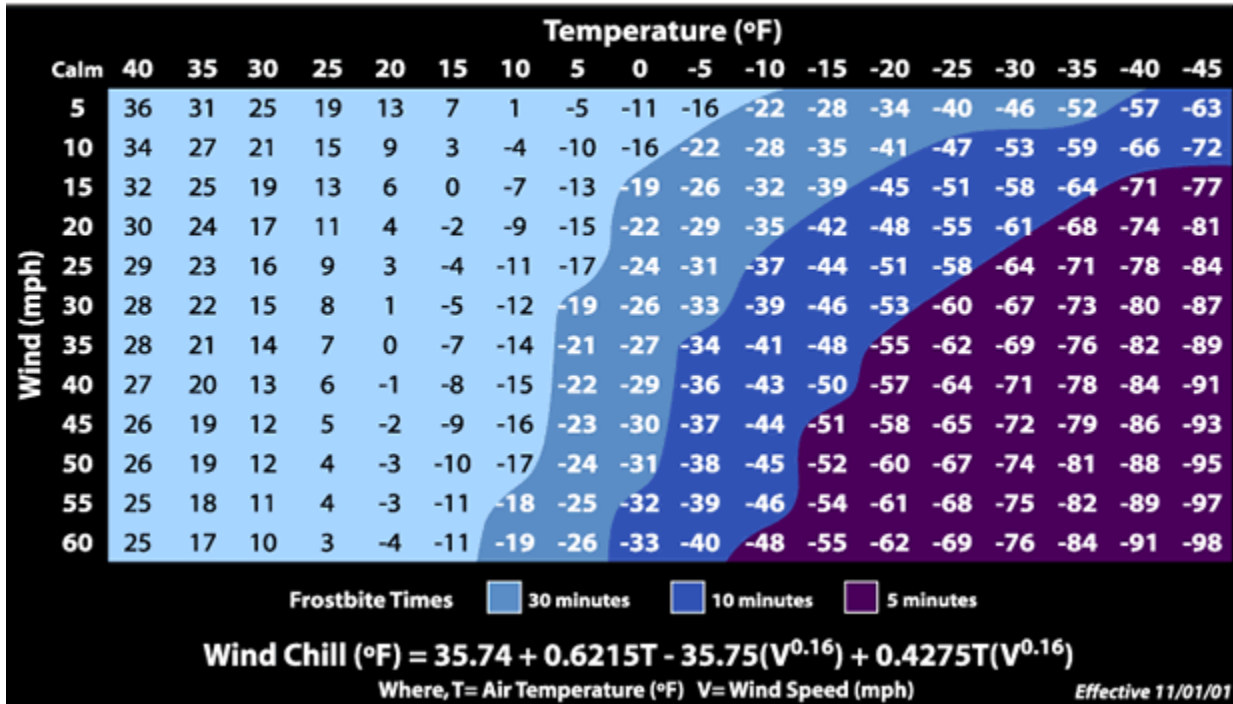
APPENDIX E
HEAT STRESS INDEX

<i>Heat Stress Index</i>									
Relative Humidity									
°F	10%	20%	30%	40%	50%	60%	70%	80%	90%
104	98	104	110	120	132				
102	97	101	108	117	125				
100	95	99	105	110	120	132			
98	93	97	101	106	110	125			
96	91	95	98	104	108	120	128		
94	89	93	95	100	105	111	122		
92	87	90	92	96	100	106	114	122	
90	85	88	90	92	96	100	106	114	122
88	82	86	87	89	93	95	100	106	115
86	80	84	85	87	90	92	96	100	109
84	78	81	83	85	86	89	91	95	99
82	77	79	80	81	84	86	89	91	95
80	75	77	78	79	81	83	85	86	89
78	72	75	77	78	79	80	81	83	85
76	70	72	75	76	77	77	77	78	79
74	68	70	73	74	75	75	75	76	77
NOTE:	Add 10°F when protective clothing is worn. Add 10°F when in direct sunlight.								
Humiture °F	Danger Category	Injury Threat							
Above 130°	EXTREME DANGER	Heat stroke imminent!							
105° to 130°	DANGER	Heat cramps or exhaustion likely, heat stroke possible if exposure is prolonged and there is physical activity.							
90° to 105°	EXTREME CAUTION	Heat cramps and heat exhaustion possible if exposure is prolonged and there is physical activity.							
80° to 90°	CAUTION	Fatigue possible if exposure is prolonged and there is physical activity.							
Below 80°	NONE	Little or no danger under normal circumstances.							

APPENDIX F
WIND CHILL CHART



NWS Windchill Chart



APPENDIX G
PEDIATRIC VITAL SIGNS

Pulse	Awake Rate	Sleeping Rate
Neonate (0-28 days)	100-205 beats per minute	90-160 beats per minute
Infant (1-12 months)	100-180	90-160
Toddler (1-2 years)	98-140	80-120
Preschooler (3-5 years)	80-120	65-100
School-aged (6-11 years)	75-118	58-90
Adolescent (≥12 years)	60-100	50-90

Respirations	
Neonates (0-28 days)	40-60 breaths per minute
Infants (1-12 months)	30-53
Toddler (1-2 years)	22-37
Preschooler (3-5 years)	20-28
School-aged (6-11 years)	18-25
Adolescent (≥12 years)	12-20

Blood Pressure	Systolic	Diastolic
Birth, preterm (<1000g)	39-59 mmHg	16-36 mmHg
Birth, term (~3kg)	60-76	31-45
Neonate (0-28 days)	67-84	35-53
Infant (1-12 months)	72-104	37-56
Toddler (1-2 years)	86-106	42-63
Preschooler (3-5 years)	89-112	46-72
School-aged (6-9 years)	97-115	57-76
Preadolescent (10-12 years)	102-120	61-80
Adolescent (≥12 years)	110-131	64-83






Note: Always consider the patient's normal range and clinical condition. Heart rate will normally increase with fever or stress.

Reference: 2015 American Heart Association Pediatric Advanced Life Support, "Vital Signs in Children" Reference Guide

Remaining Oxygen Supply Table

This table provides estimates of remaining time in minutes for various sizes of oxygen tanks filled to the given PSI when administered at the listed liters per minute. This table may help prepare for long distance transports by ensuring that the oxygen supply will last at the expected flow rate for a patient. **Caution:** These are estimated times and do not account for the need to increase flow rate, delays that extend expected travel time, or other variables. Agencies should ensure that there is a reasonable buffer when calculating oxygen supply for transports.

Example: In an ambulance with an M tank at 500 PSI on an interfacility transport with a patient receiving 6 lpm oxygen by simple face mask, it is estimated that the oxygen will last for 130 minutes.

		→ <i>Liters/minute</i>							
	↓ PSI	2	4	6	8	10	12	15	25
"D" 425 l 	2000	160	80	53	35	29	27	19	13
	1500	120	60	40	30	24	20	16	10
	1000	80	40	27	20	16	13	11	6
	500	40	20	13	10	8	7	5	3
"JD" 640 l 	2000	290	145	97	73	58	48	39	23
	1500	218	109	73	54	44	36	29	17
	1000	145	73	48	36	29	24	19	12
	500	73	36	24	18	15	12	10	6
"E" 680 l 	2000	280	140	93	70	56	47	37	22
	1500	210	105	70	53	42	35	28	17
	1000	140	70	47	35	28	23	19	11
	500	70	35	23	18	14	12	9	6
"M" 3455 l 42" x 7" 	2000	1560	780	520	390	312	260	208	125
	1500	1170	585	390	293	234	195	156	94
	1000	780	390	260	195	156	130	104	62
	500	390	195	130	98	78	65	52	31
"H" 7842 l 60" x 9" 	2000	3140	1570	1047	785	628	523	419	251
	1500	2355	1178	785	589	471	393	314	188
	1000	1570	785	523	393	314	262	209	126
	500	785	393	262	196	157	131	105	63

APPENDIX I

PENNSYLVANIA EMS HANDOFF REPORT

Give EMS 30 seconds, they'll tell you everything you need to know!!!

D	Demographics	Age, Sex, Weight (If pertinent)
M	Mechanism of Injury or Medical Compliant	Medical: OPQRST as appropriate Mechanism: Speed, Mass, Height of fall, Restraints, Type of collision, Safety devises used, Type of weapon
I	Injury or Illness	Injuries: Head to toe, Significant findings Info: ECG, Stroke Scale, SAMPLE
S	Vital Signs	GCS, Pulse, Resp., BP, SpO2, BSG if applicable
T	Treatments Provided	Tx: Tubes, Lines, Meds, Electrical Therapy, O2, Wound care Trends: Responses to treatments

CRITICAL PATIENT

- ✳ Patient transferred to hospital stretcher
- ✳ Hospital team performs critical interventions as needed
- ✳ When appropriate, Hospital Team Lead calls for "EMS TIME OUT"
- ✳ 30 second period of SILENCE for EMS report
- ✳ EMS remains present for additional questioning

STABLE PATIENT

- ✳ Patient remains of EMS stretcher
- ✳ Hospital Team Lead calls for "EMS TIME OUT"
- ✳ 30 second period of SILENCE for EMS report
- ✳ Patient is transferred to hospital stretcher and hospital team begins care
- ✳ EMS remains present for additional questioning

Per regulation, EMS shall complete a DOH EMS Transfer of Care form and provide it to the receiving facility staff prior to departing.



APPENDIX J

Pediatric Weight Conversion

PEDIATRIC WEIGHT CONVERSION

Pound	Ounce	kgs
5	5	2.4
5	8	2.5
5	12	2.6
5	15	2.7
6	3	2.8
6	6	2.9
6	10	3.0
6	13	3.1
7	1	3.2
7	4	3.3
7	8	3.4
7	11	3.5
7	15	3.6
8	3	3.7
8	6	3.8
8	10	3.9
8	13	4.0
9	1	4.1
9	4	4.2
9	8	4.3
9	11	4.4
9	15	4.5
10	2	4.6
10	6	4.7
10	9	4.8
10	13	4.9
11	0	5.0
11	4	5.1
11	7	5.2
11	11	5.3
11	14	5.4
12	2	5.5
12	6	5.6
12	9	5.7
12	13	5.8
13	0	5.9

Pound	Ounce	kgs
13	4	6.0
13	7	6.1
13	11	6.2
13	14	6.3
14	2	6.4
14	5	6.5
14	9	6.6
14	12	6.7
14	16	6.8
15	3	6.9
15	7	7.0
15	10	7.1
15	14	7.2
16	2	7.3
16	5	7.4
16	9	7.5
16	12	7.6
16	16	7.7
17	3	7.8
17	7	7.9
17	10	8.0
17	14	8.1
18	1	8.2
18	5	8.3
18	8	8.4
18	12	8.5
18	15	8.6
19	3	8.7
19	6	8.8
19	10	8.9
19	13	9.0

Pounds	kgs
22	10
24	11
26	12
29	13
31	14
33	15
35	16
37	17
40	18
42	19
44	20
46	21
49	22
51	23
53	24
55	25
57	26
60	27
62	28
64	29

Pounds	kgs
66	30
68	31
71	32
73	33
75	34
77	35
79	36
82	37
84	38
86	39
88	40
90	41
93	42
95	43
97	44
99	45
101	46
104	47
106	48
108	49



Pennsylvania EMS for Children

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This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number H33MC06717 Emergency Medical Services for Children. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

INDEX

12-Lead Electrocardiography [Optional] 250-1

Abuse & Neglect (Child and Elder) 204-1 thru 204-2

Agitated Behavior/Psychiatric Disorders 801-1 thru 801-3

Air Ambulance Safety Considerations 192-1 thru 192-2

Air Medical Transport for Non-Trauma Patients 181-1 thru 181-2

Allergic Reaction / Anaphylaxis 411-1 thru 411-2

Altered Level of Consciousness/ Diabetic Emergency 702-1 thru 702-2

Amputation 662-1

Blast / Explosive Injury 605-1 thru 605-2

Bleeding Control 601-1 thru 601-2

Burn 671-1 thru 671-2

Carbon Monoxide Co-oximetry [Optional] 227-1 thru 227-2

Cardiac Arrest – Adult 331A-1 thru 331A-4

Cardiac Arrest – Pediatric 331P-1 thru 331P-3

Cardiac Arrest – Traumatic 332-1

Chest Pain/Suspected Acute Coronary Syndrome 501-1 thru 501-2

Civil Disturbance Considerations (Guidelines) 915-1 thru 915-3

Crime Scene Preservation (Guidelines) 919-1

Dead on Arrival (DOA) 322-1

ECG Monitor Preparation (Assisting ALS) 251-1 thru 251-2

Emergency Childbirth 781-1 thru 781-3

EMS Vehicle Operations/Safety 123-1 thru 123-3

Explosive/ Blast Injury 605-1 thru 605-2

General Protocol Principle 100-1 thru 100-4

Glucose Measurement (Glucometer) [Optional] 228-1

Head Injury (Traumatic Brain Injury) 611-1 thru 611-2

Heat Emergency 686-1

Human Trafficking (Guidelines) 206-1 thru 206-2

Hypothermia / Cold Injury / Frostbite 681-1 thru 681-2

Impaled Object 632-1

Indications for ALS Use 210-1 thru 210-2

Indwelling Intravenous Catheters / Other Medical Devices 921-1 thru 921-2

Infection Control / Body Substance Isolation (Guidelines) 103-1 thru 103-2

Initial Patient Contact 201-1

Medical Command Contact 901-1 thru 901-3

Multisystem Trauma or Traumatic Shock 602-1 thru 602-2

Near Drowning and Diving Injury 691-1

Newborn Resuscitation 333-1 thru 333-2

Non-Transport of Individual Patient or Cancellation of Response 112-1 thru 112-2

On-Scene Physician / RN 904-1 thru 904-2

Out-of-Hospital Do Not Resuscitate 324-1

Oxygen Administration 202-1 thru 202-2

Patient Destination – Ground Transport 170-1 thru 170-4

Poisoning / Toxin Exposure (Ingestion / Inhalation / Absorption / Injection) 831-1 thru 831-3

Psychiatric Disorders/ Agitated Behavior 801-1 thru 801-3

Pulse Oximetry 226-1 thru 226-2

Non-Treatment and/or Non-Transport of Patient Refusal of Treatment / Transport.....111-1 thru 111-5
 Rehabilitation at Fire/ Incident Scene (Guidelines) 150-1 thru 150-4
 Respiratory Distress / Respiratory Failure 421-1 thru 421-3

Safe Transportation of Children in Ground Ambulances (Guidelines)..... 24-1 thru 124-3
 Scene Safety (Guidelines) 102-1 thru 102-2
 Spine Care 261-1 thru 261-3
 Suspected Stroke 706-1 thru 706-4

Tooth Avulsion621-1
 Transportation of Service Animals (Guidelines)910-1
 Trauma Patient Destination [AIR AMBULANCE PROTOCOL] 190-1 thru 190-4
 Trauma Patient Destination..... 180-1 thru 180-4
 Traumatic Brain Injury 611-1 thru 611-2

VAD (Ventricular Assist Device) Management 590-1 thru 590-2
 Ventilation via Endotracheal Tube or Alternative/Rescue Airway (Assist ALS) 222-1 thru 222-2
 Ventricular Assist Device (VAD) Management 590-1 thru 590-2

APPENDICES

Appendices Index.....A-1
 APGAR Scoring Chart.....A-2
 Burn Chart – Rule of NinesA-3
 DMIST – EMS Handoff ReportA-10
 EMS Handoff ReportA-10
 Glasgow Coma ScoreA-4
 Handoff Report, Pennsylvania EMSA-10
 Heat Stress Index.....A-6
 Oxygen Supply Table, RemainingA-9
 Pediatric Vital SignsA-8
 Pediatric Weight Conversion.....A-11
 Rehabilitation Patient TagA-5
 Remaining Oxygen Supply TableA-9
 Vital Signs, PediatricA-8
 Weight Conversion, Pediatric.....A-11
 Wind Chill ChartA-7