pennsylvania
DEPARTMENT OF HEALTH

BUREAU OF EMERGENCY MEDICAL SERVICES

Pennsylvania Statewide

Basic Life Support Protocols

Pennsylvania Department of Health
Bureau of Emergency Medical Services

Effective November 1, 2008

pennsylvania
DEPARTMENT OF HEALTH

BUREAU OF EMERGENCY MEDICAL SERVICES

(717) 787-8740

August 1, 2008

Dear EMS Practitioner:

The Bureau of EMS, Department of Health, is pleased to provide these updated "Statewide BLS Protocols" to the EMS personnel of Pennsylvania.

These protocols are an update to the current version of the Statewide BLS Protocols that originally became effective on September 1, 2004 and were previously updated on November 1, 2006. New sections of the protocols that correspond to these 2008 updates are identified with yellow highlighting, and this will assist EMS personnel when looking for updated changes. These updated protocols may be used by EMS personnel as soon as they are familiar with the updates, but all personnel must be using these updated protocols by the effective date of November 1, 2008. Several resources will be available to assist EMS personnel in becoming familiar with the protocol updates. These include in-service presentations that will be available to regions and services, and online update information on the Learning Management System (LMS). If you are not registered for the free LMS continuing education system, please contact the regional EMS council responsible for the area in which you live.

Wherever possible, the protocols were developed to be evidence-based and to include the best thinking of expert practitioners. The protocols must fit together with other documents like Pennsylvania's EMT and First Responder curricula, scope of practice notices for EMS personnel, and BLS skills sheets, to provide a uniform, consistent, and high-quality foundation for prehospital care. The protocols will support initial training of personnel, be reinforced through continuing education programs, and be applied in the delivery of patient care in the field.

EMS personnel are permitted to perform patient care, within their PA defined scope of practice, when following the appropriate protocol(s) or when following the order of a medical command physician. Each EMS practitioner 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.

When providing patient care under the EMS Act, EMS personnel 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 administered by ALS practitioners.

Since written protocols cannot feasibly address all patient care situations that may develop, the Department expects EMS personnel to use their training and judgment regarding any protocol-driven care that would be harmful to a patient. When the practitioner believes that following a protocol is not in the best interest of the patient, the EMS practitioner 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 personnel 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 practitioner, important EMS Information Bulletins, and many other helpful resources. This information can be accessed online at www.health.state.pa.us/ems. The Statewide BLS Protocols may be directly printed or downloaded into a PDA for easy reference.

The Department is committed to providing Pennsylvania's EMS personnel with the most up-to-date protocols, and to do this requires periodic updates. The protocols will be reviewed regularly, and EMS personnel are encouraged to provide recommendations for improvement at any time. Comments should be directed to the Commonwealth EMS Medical Director, Bureau of EMS, Room 606 Health & Welfare Building, 625 Forster Streets, Harrisburg, PA 17120-0701. Comments can be sent by email to: paemsoffice@state.pa.us

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SECTION 100: Operations

SECTION 200: Assessments & Procedures

SECTION 300: Resuscitation

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APPENDICES

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.
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 ambulance service's policy regarding management of personnel safety [as required by EMS Act regulation 28 § 1005.10 (l)], but this general information may augment the service's policy.

B. These guidelines do not comprehensively cover all possible situations, and EMS practitioner judgment should be used when the ambulance service's policy does not provide specific direction.

Procedure:

A. If violence or weapons are anticipated:

1. EMS personnel should wait for law enforcement officers to secure scene before entry.
2. Avoid entering the scene alone.[1]
3. If violence is encountered or threatened, retreat to a safe place if possible and await law enforcement.

B. MVAs, Industrial Accidents, Hazardous Materials situations:

1. General considerations:
   a. Obtain as much information as possible prior to arrival on 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. Upwind and uphill of possible fuel spills and hazardous materials.
   b. Park in a manner that allows for rapid departure.
   c. Always leave room for access for fire/rescue and other support vehicles.
3. Safety:
   a. Consider placement of flares/warning devices.
   b. Avoid entering a damaged/disabled vehicle until it is stabilized.[2]
   c. Deliberately place your EMS vehicle so that its lights blind oncoming traffic.
   d. Use ambulance headlights to light up scene on all sides of vehicle.
   e. PPE is suggested for all responders entering vehicle or in area immediately around involved vehicle(s).

C. Parked Vehicles (non-crash scenes):

1. Position Ambulance:
   a. Behind vehicle, if possible, in a manner that allows rapid departure and maximum safety of EMS personnel.
   b. Turn headlights on high beam and utilize spotlights aimed at rear view mirrors.
   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.
   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.[3]
   e. Never stand directly to the side or in front of the persons in the front seat or in front of a vehicle.

3. Patients:
    a. Attempt to arouse victim by tapping on window.
    b. Identify yourself as an EMS practitioner.
    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 at an angle.
    b. Listen for sounds; screaming, yelling, gunshots.
    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 the 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 sides 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 supercede an ambulance service's infection control policy [as required by EMS Act regulation 28 § 1005.10 (l)], but this general information may augment the service's policy.

B. These guidelines do not comprehensively cover all possible situations, and EMS practitioner judgment should be used when the ambulance service'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 15 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 practitioner 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 practitioner has an exposure to blood or body fluids[1], the practitioner must follow the service's infection control policy and the incident must be immediately reported to the service infection control officer as required. EMS practitioners who have had an exposure[2] 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. Prevent inhalation 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 SARS)
   b. HEPA mask (N-95 or better), gowns, goggles and gloves should be worn during patient contact.
   c. A mask should be placed upon the patient if his/her respiratory condition permits.
   d. Notify receiving facility of patient's condition so appropriate isolation room can be prepared.
8. Thoroughly clean and disinfect equipment after each use following service 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.

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.

Exclusion Criteria:

A. Patient involved in incident but not injured or ill, See Protocol #112.

System Requirements:

A. [OPTIONAL] An EMS service or region may require its personnel to complete an EMS Patient Refusal Checklist as part of the PCR for every patient that refuses transport. Regional medical treatment protocol may require contact with medical command physician for all patients 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 practitioners, 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 Patient Refusal Checklist if required by regional or service):
   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 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 practitioners, the practitioners may treat and transport the patient as per appropriate treatment protocol. Otherwise contact medical command. See Behavioral Disorders/Agitated Patient (Restraint) protocol #801 is appropriate.
5. Contact medical command if using the EMS Refusal Checklist and any response is completed within a shaded box **or** if patient assessment reveals at least one of the following:
   a. EMS practitioner is concerned that the patient may have a serious illness or injury.
   b. Patient has suicidal ideation, chest pain, shortness of breath, hypoxia, syncope, or evidence of altered mental status from head injury
   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. Violation of **or** local law.
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.
   b. Have patient[3] and witness sign the EMS Refusal Checklist or other refusal form[4].
   c. Consider:
      1) Educate patient/family to call back if patient worsens or follow-up care not obtained.
      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 services may choose to require that practitioners complete the EMS Patient Refusal Checklist that is included in this protocol as part of the PCR for every patient that refuses treatment. In the absence of a completed EMS Patient Refusal checklist, documentation in the PCR should generally include:

1. History of event, injury, or illness.

9. Signatures of patient and/or witnesses when possible.

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 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. Medical command contact and instructions, when applicable.

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 personnel to contact law enforcement or mental health agency to facilitate treatment and/or transport against the patient's will. In this case, the safety of the EMS practitioners is paramount and no attempt should be made to carry out an order to treat or transport if it endangers the EMS practitioners. Contact law enforcement as needed.

Notes:

1. If the patient lacks the capacity to make medical decisions, the EMS practitioner shall comply with the decision of another person who has the capacity to make medical decisions, is reasonably available, and who the EMS practitioner, 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 practitioner may contact this person by
    b. This person will often, but not always, be a parent or legal guardian of the patient. The EMS practitioner 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 practitioner may nevertheless comply with the decision if the EMS practitioner, 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 practitioner should consider talking with a family member or friend of the patient. With the patient's permission, the EMS practitioner 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 practitioner should have a witness confirm the decision. If the decision is to refuse the recommended treatment or transport, the EMS practitioner should request the witness to sign the refusal checklist of form.
    b. If a person who appears to have the authority to make medical decisions for the minor cannot be located, and the EMS practitioner 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 practitioner 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 practitioner 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 practitioner is unable to contact a medical command physician for direction, the EMS practitioner may provide medical treatment to the and transport a minor patient without securing consent. An EMS practitioner 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 practitioner 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 Patient Refusal checklist for every patient that refuses transport, if required by service or regional policy.

B. Compliance with medical command physician contact when indicated by criteria listed in protocol.

EMS Patient Refusal Checklist

EMS Service: 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? Yes No
Head Injury? Yes No
Patient Oriented to: Person Yes No Intoxication? Yes No
Place Yes No Chest Pain? Yes No
Time Yes No Dyspnea? Yes No
Event Yes No Syncope? Yes No

Vital Signs: ***Consult Medical Command if:***
Pulse _____ <50bpm or >100 bpm
Sys BP _____ <100 mm Hg or > 200 mm Hg
Dia BP _____ <50 mm Hg or > 100 mm Hg
Resp _____ < 12rpm or > 24rpm

If altered mental status or diabetic –(ALS only)-
Chemstrip/Glucometer: mg/dl
< 60mg/dl

If chest pain, S.O.B. or altered

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 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 EMS personnel for myself or on behalf of this patient. I understand that EMS personnel 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 ambulance 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

NON-TRANSPORT OF 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 ALS or BLS provider may cancel its 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 service can handle the incident more quickly or more appropriately.
    c. When EMS personnel on scene determine that a patient does not require care beyond the scope of practice of the on scene provider, the EMS practitioner may cancel additional responding EMS providers. This includes cancellation of providers responding to patients who are obviously dead (see Protocol #822).
    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, ALS may be cancelled if it is determined that ALS cannot rendezvous with the BLS provider in time to provide ALS care before the BLS ambulance arrives at the hospital.
2. Ambulance hospitals 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 practitioner.

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 practitioner:

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 practitioner has no further obligation to this individual.
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 patient:
    b. History, confirming lack of significant mechanism of injury, symptoms of injury or illness, or physical exam findings consistent with injury or illness
    c. Patient assessment, confirming lack of signs or symptoms.
4. If serious illness/injury is suspected, follow Patient Refusal of Treatment Protocol # 111.

C. Release of patients:

1. When patient care is transferred to another EMS practitioner, the initial practitioner 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 service releases patient care and/or transport to BLS service)
    b. Patient care needs outnumber EMS personnel resources at scene and waiting for an equivalent or higher level of care practitioner 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 personnel for appropriateness

Criteria:

A. All EMS incident responses and patient transports.[1]

System Requirements:

A. These guidelines provide general information and "best practice" guidelines related to the use of lights and sirens by EMS personnel during incident response and patient transport. Ambulance services may use these guidelines to fulfill the service's requirement for a policy regarding the use of lights and other warning devices pas required by EMS Act regulation 28 § 1005.10 (l) or regions may use these guidelines in establishing regional treatment and transport protocols.

Policy:

A. Use of lights and other warning devices [EMS Act regulation 28 § 1005.10 (g)]:

1. Ambulance 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.

B. Response to incident:

1. The EMS vehicle driver 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 services shall respond in a mode (L&S or non-L&S) consistent with the category of the call at dispatch as directed by the dispatch center.[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. "Standbys" 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.
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.
    b. 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 crewmember 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. L&S should not be used during patient transport unless the patient meets one of the following medical criteria:[4,5]
    a. Emergent transport should be used in any situation in which the most highly trained EMS practitioner 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.
        1) Systolic BP < 90 mmHg (or < 70 + [2 x age] for patients under 8 years old).

1) Inability to establish or maintain a patent airway.
2) Upper airw

d.
1) Severe respiratory distress. (Objective criteria may include pulse oximetry less than 90%, retractions, stridor, or respiratory rate > 32/min or < 10 min).

e.
1) Cardiac arrest with persistent ventricular fibrillation, hypothermia, overdose/ or poisoning.

Note: Most other cardiac arrest patients should not be transported with L&S.[6]

f
1) Patient with anatomic or physiologic criteria for triage to a trauma center (Category 1 Trauma). Refer to Trauma Triage Protocol #180.

g.
1) Patient does not follow commands (motor portion of GCS < 5).
2) Recurrent or persistent generalized seizure activity.
3) Acute stroke symptoms (patient has Cincinnati Prehospital Stroke Scale findings) that began within the last 3 hours. See Stroke Protocol #706.

h.
1) Upper

i. **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).[7]
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 ambulances exceeds available resources). These exceptions should be documented.

D. Other operational safety considerations:

1. The following procedures should be followed for safe EMS vehicle operation:
   a. Daytime running lights or low-beam headlights will be on (functioning as daytime running lights) at all times while operating EMS vehicles during L&S and non-L&S driving.
   b. L&S should only 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 land or one-way street) granted to EMS vehicles that are responding or transporting in an emergency mode.
   c. When traveling in an opposing traffic lane, the maximum speed generally should not exceed 20 m.p.h.
   d. 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.
   e. 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 would to the abdomen", "systolic BP<90", etc.).[2]
   f. Seat belts or restraints will be securely fastened to the following individuals when the vehicle is in motion:
      1) All EMS vehicle operators
      3) All non-EMS passengers (cab and patient compartment)
      4) All EMS practitioners (when patient care allows)
      5) All infants and toddlers (these children should be transported in an age appropriate child seat if their condition allows). Children should not be placed in cab passenger seat with airbag.

Notes:

1. These guidelines are secondary to and do not supercede the Pennsylvania Motor Vehicle
2. Dispatch centers/PSAPs and EMS regions are encouraged to have medically approved EMD protocols that differentiate emergent responses (for example, “emergency”, “code 3”, “red”, “Charlie”, “Delta”, etc…) from a lesser level of response (for example, “urgent”, “code 2”, “yellow”, “Alpha”, “Bravo”, 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 PaPCR.
3. Firefighters cross-trained as EMS personnel 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 (up to 95% of EMS incidents), EMS personnel 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. Each of these criteria refers to an acute change in the patient’s condition. For example, a patient who is chronically comatose would not automatically require L&S transport because the individual does not follow commands (criterion 2.g.1). Additionally, if the patient improves with treatment and no longer meets the criteria, L&S transport is not necessary.
6. The American Heart Association gives a class III recommendation to L&S transport of patients in cardiac arrest. A Class III indication is not helpful and is potentially harmful. Providing CPR during L&S transport may increase the risk for injury to EMS personnel.

L&S may be indicated in some situations where ALS is indicated, but not available or cancelled, because the ALS crew can not 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 A.13.b – A.13.h.

D. Monitor percentage of urgent/emergent (“911”) calls using L&S during transport. [Potential benchmark >90-95% of patients transported without L&S]

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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 services. 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 facility.
2. The receiving hospital 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 trauma center in ≤ 45 minutes. These patients should only be taken to a level 3 trauma center when the patient can arrive at a level 3 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 trauma center is ≤ 30 minutes. Consider air transport if either:
      1) Air transport will deliver the patient to the 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 ≤ 30 minutes, air transport is generally not necessary for these patients who do not meet anatomic or physiologic trauma triage criteria.]
   a. Contact medical command if required by regional protocol. **Note: EMS regions may require attempted contact with medical command for assistance with destination decisions for Category 2 trauma patients.**
   b. Reassess patient's condition frequently for worsening to Category 1 trauma criteria.

c. Transport patient to the closest trauma center (Level 1, 2, or 3)[4,5] if patient can arrive at the closest trauma center in ≤ 45 minutes. 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.
d. Transport by ground if driving time is ≤ 30 minutes.
e. 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 personnel 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 personnel must request an air ambulance through the local PSAP without requesting a specific air ambulance service. The incident command system, when in place, should be used to accomplish this request. The PSAP should initially contact the air ambulance service that is 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 medical services may transport specialized medical teams for the treatment of unusual situations (for example, severe entrapment with the possibility of field amputation).
4. Prolonged delays at scene while awaiting air medical transport should be avoided.
   a. If an air ambulance is not available due to weather or other circumstances, transport the patient by ground using policy section B to determine destination.
   b. If patient is not entrapped, transport to an established helipad (for example a ground helipad at the closest receiving hospital[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 contact medical control and determine the destination based upon the Statewide Air Medical Trauma Patient Destination Protocol.
3. Transport by Ambulance to a facility other than the closest 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 trauma center is on "diversion" based upon information from the trauma center.
   c. The patient or other person with legal authority to act for the patient refuses transport to the closest trauma center.

Notes:

1. Patients in cardiac arrest who have penetrating trauma or are in third trimester (>24 weeks) of pregnancy should be taken to the closest trauma center if time to arrival at the closest trauma center is 15 minutes or less. Otherwise, patient should be transported to the closest hospital.
2. Transport should generally not be delayed while awaiting the arrival of ALS service or an air ambulance unless the ALS service or air ambulance has a confirmed ETA to the scene that is less than the ETA to the closest hospital.
3. Although these categories may be useful in identifying patients who should be transported to a trauma center during a mass casualty incident, patient transport prioritization should follow the system identified in the regional/ local mass casualty incident plan.
4. "Trauma Center" refers to a Regional Resource Trauma Center (Level 1), a Regional Trauma Center (Level 2), or a Level 3 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 may 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 difference between transport to the closest trauma center and transport to the pediatric trauma center is no more than 10 minutes.
6. If the patient is not entrapped, EMS personnel 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 personnel 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.

Trauma Triage Criteria

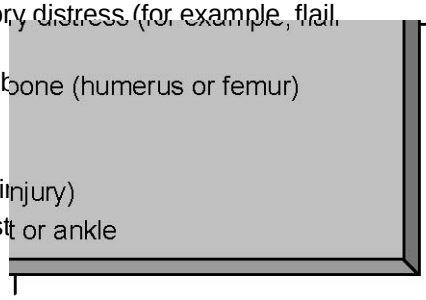
Assess patient for any one of the following

Physiologic Criteria:

- Patient does not follow commands (GCS Motor ≤ 5)
- Hypotension, even a single episode (SBP < 90 mmHg in adults or SBP <70 in children)

Anatomic Criteria:

- Penetrating injury to head, neck, torso and extremities proximal to elbow or knee (unless obviously superficial)
- Chest injuries with respiratory distress (for example, flail chest)
- Two or more proximal long-bone (humerus or femur) fractures
- Pelvic fractures
- Limb paralysis (spinal cord injury)
- Amputation proximal to wrist or ankle



YES

NO

Mechanism of Injury:

- Falls
  - Adult: > 20 feet (one story = 10 feet)
  - Peds: > 10 feet or 2-3 x height of child
- High Risk Auto Crash
  - Passenger compartment intrusion: > 12 in. occupant side or > 18 in. into compartment any side
  - Ejection (partial or complete) from automobile
  - Death in same passenger compartment
- Auto vs. Pedestrian/ Bicyclist: Thrown, run over, or >20 mph impact
- Motorcycle crash > 20 mph

YES

Other factors combined with traumatic injuries:

- Age < 5 years or > 55 years
- Combination of trauma with burns
- Crushed/ degloved/ mangled extremity or finger amputation
- Known bleeding disorder or taking coumadin/ heparin
- Pregnancy (>20 weeks)

NO

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 that started within the last 2 hours.

C. Patients 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 service or air ambulance unless the ALS service or air ambulance has a confirmed ETA to the scene that is less than the ETA to the closest hospital.
   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 and be determined.
      2) Transport the patient by ground if driving time to the specialty center (STEMI center) is less than 30-45 minutes.
   d. Acute stroke patients:
      1) Consider air medical transport if a patient has acute stroke symptoms **and** were last witnessed to be in their normal state within the last 2 hours. 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 specialty center (stroke center) is less than 30-45 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 (STEMI center, stroke center, etc.) is less than 30-45 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 personnel 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 personnel must request an air ambulance through the local Public Safety Answering Point (PSAP) without requesting a specific air ambulance service. The PSAP should initially contact the air ambulance service that is based closest to the scene.
3. The air ambulance may bring equipment and personnel with resources that are not available on the ground ambulances. These may be useful in the following situations:
   a. Patients with GCS ≤ 8 may benefit from advanced airway techniques that the air medical crew can perform.
   b. Air medical services 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 medical service 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 practitioner 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 practitioner 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 practitioner 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)

AIR AMBULANCE SAFETY CONSIDERATION GUIDELINES

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 services, but since specific recommendations may differ by aircraft type or other factors it is not meant to supercede such information.

Procedure:

A. Landing Zone (LZ) Recommendations:

1. **Location:**
   a. Global Positioning Satellite (GPS) systems may assist providing precise location of LZ.
2. 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. 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. 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. Blow 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 long distances.
   b. Pilots may ask for them to be turned off after LZ is identified depending on overall illumination
9. Miscellaneous needs:
   a. Control bystanders to prevent their approach to aircraft and LZ.
   b. Pilot has the final say in LZ acceptability.
   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 take off.
13. An engine company at LZ is not necessary unless required by local protocol.
14. Hot Loading:
    a. Follow air ambulance crew directions carefully.
    b. Wear ear protection if available including eye, head, and ear protection.
    c. Remove all baseball caps and hats and secure all loose clothing.
    d. Approach aircraft only when accompanied by air crewmember.
    e. After loading the patient, depart aircraft and LZ by the exact path used to enter.
    f. Never walk under anything that is higher than the level of your head (including IV bags.)

INITIAL PATIENT CONTACT
STATEWIDE BLS PROTOCOL

Criteria:

A. All patients.

Exclusion Criteria:

A. None

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 aeromedical service, if indicated and available.

B. All Patients:

1. If trauma MOI, stabilize cervical spine during assessment.
2. Perform initial assessment. (Form a general impression of the patient; determine the chief complaint and/or life threatening problems; determine responsiveness; assess airway and breathing; assess circulation.) [1]
3. Assure open airway; proceed with obstructed airway treatment if needed.
4. 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.
5. If breathing is inadequate, ventilate patient as needed.
6. Control any serious or uncontrolled bleeding – see Protocol #601.
7. If priority condition exists administer high concentration oxygen, treat immediately, and transport with reassessment and treatment by applicable protocol while enroute to the appropriate medical facility.
   a. Priority conditions are:
      1) Unable to obtain open airway.
      2) Poor general impression.
      3) Altered mental status and not following commands
      4) Difficulty breathing/ inadequate ventilation.
      5) Hypoperfusion (shock).
      6) Complicated childbirth
      7) Chest pain (with SBP< 100)
      8) Uncontrolled bleeding
      9) Severe pain anywhere
   b. If no priority condition exists, obtain history (SAMPLE & OPQRST) and perform focused physical exam.
8. Treat and transport per applicable protocol(s).

Notes:

1. If assessment of patient justifies ALS or air medical care, summon ALS or air ambulance service if available and not already dispatched. See Indications for ALS Use protocol #210 and Trauma Patient Destination protocol # 180.

OXYGEN ADMINISTRATION
STATEWIDE BLS PROTOCOL

Criteria:

A. Patients presenting with the following conditions:

1. Severe respiratory distress.
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. None

Procedure:

A. All patients:

1. Apply oxygen:
   a. Administer high concentration oxygen if the patient has a priority condition (as defined in Initial Patient Contact Protocol #201) or as directed by specific treatment protocol for the patient's condition.
      1) Patients who require high concentration oxygen per specific protocols should receive oxygen via non-rebreather mask[1], except:
      2) 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) **[OPTIONAL]** If pulsoximetry available, may administer oxygen by nasal cannula if SpO2 > 95% on cannula. See Pulse Oximetry Protocol #226. Note- this does not apply to patients with suspected carbon monoxide or cyanide exposure. These patients should receive 100% O2 via NRB mask.[2]
2. Be prepared to assist ventilations as necessary. If ventilation is required, high concentration oxygen should be given by the ventilatory 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. Practitioners should reassess the patient for signs of respiratory depression and should be prepared to assist ventilations if required.
2. See Pulse Oximetry protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%.

ABUSE & NEGLECT (CHILD)
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. Multiple 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 emergency medical services (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 of elder 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 multi-colored bruises of different ages, 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 Practitioner – 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 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 practitioner has reasonable cause to suspect that a child (minor) has been abused or neglected, the practitioner must report the suspected abuse
            a) The suspected abuse **must be reported immediately** in verbal form to the PA Child Abuse Hotline (DPW) at 800-932-0313, **AND**
            b) The suspected abuse **must be reported within 48 hours** in written form to the appropriate county Children and Youth agency by completing a CY-47 form.[3]
    b. **Suspected Elder Abuse (individuals 60 years of age or older):**[2]
        1) If an EMS practitioner has reasonable cause to suspect that an individual 60 years of age or older needs protective services, the practitioner may report that information. ["Protective services" are activities, resources and supports to detect, prevent or eliminate abuse, neglect, exploitation, and hazardous conditions]
            a) The suspected abuse and elder 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

Notes:

1. Pennsylvania law requires mandatory reporting by health care practitioners, including EMS practitioners, 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 practitioners in making the required contacts and reports, but in cases where reporting of suspected abuse is required, it remains the EMS practitioner'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 DPW hotline call-takers will provide assistance.
3. EMS personnel are also encouraged to make this report to the local Children and Youth Agency immediately by phone.
4. **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 practitioners 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.

INDICATIONS FOR ALS USE
STATEWIDE BLS PROTOCOL

Criteria:

A. All patients.

Exclusion Criteria:

A. None.

Procedure:

A. All patients:[1]

1. Basic Life Support ambulance may request an Advanced Life Support (ALS) provider when they think that the patient's needs exceed their capabilities. These conditions may include but are not limited to:
   a. Altered level of consciousness.
   b. Allergic reactions 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 arrest.
   d. Chest pain or anginal equivalent symptoms.
   e. Diabetic problem (not alert and/or abnormal blood glucose).
   f. Multiple 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.
   l. Emergency care with injuries (unless obviously minor injuries).
   m. Severe trauma.
   n. Shock (hypoperfusion).
   o. Stroke/CVA symptoms.
   p. Syncope (fainting).
   q. Severe pain.
   r. Any patient with vital signs outside of the normal range:
      1) Patient does not follow commands (motor GCS <5).
      2) Pulse: <60 or >120 a minute.
      3) Respirations: < 10 or >35 a minute.
      4) BP: Systolic < 90.
2. If transport time by BLS to an appropriate receiving facility can be accomplished before ALS can initiate care, then the BLS service should transport as soon as possible and should not request or should cancel ALS.
3. BLS services should not delay patient care and transport while waiting for ALS personnel. If ALS arrival at scene is not anticipated before initiation of transport, arrangements should be made to rendezvous with the ALS service.[2]

Notes:

1. BLS personnel 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 transport time with a nearby ALS service 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 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 in not mandatory for these conditions in all cases.

VENTILATION VIA ENDOTRACHEAL TUBE OR ALTERNATIVE/RESCUE AIRWAY ASSISTING WITH ALS PROCEDURES
STATEWIDE BLS PROTOCOL

Criteria:

A. This protocol will be used to guide ventilation via endotracheal tube or Alternative/ Rescue Airway by BLS personnel.

Exclusion Criteria:

A. None

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.

B. Ventilation via ETT or Alternative/ Rescue Airway must occur only when in direct presence of a responsible ALS practitioner who is on-scene functioning with an ALS service.

Procedure:

A. All Patients:[1]

1. Connect the bag-valve device or oxygen powered positive pressure ventilator to the ETT or to the proper port of the Alternative/ Rescue Airway and begin to ventilate:
   a. Ventilate at adequate rate. **AVOID OVERZEALOUS HYPERVENTILATION!**
      1) Generally appropriate rates for ventilation are:[2]
         a) Adults, >8 y/o 8-12 breaths / minute
         b) Children 1-8 y/o 20 breaths / minute
         c) Infants < 1 y/o 25 breaths / minute
      2) Controlled hyperventilation is appropriate in some cases of head injury – See Head Injury Protocol # 611.
   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 practitioner 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 practitioner may request immobilization with a spine board and CID to minimize tube dislodgement from neck motion.
4. Notify the ALS practitioner 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 in carbon dioxide production if CO_2 detector is used.
   d. The patient begins to breathe spontaneously.
5. If patient has a pulse and if pulsoximeter is available, place pulsoximeter on patient and notify ALS practitioner immediately if SpO_2 decreases.
6. If available, monitor ventilatory rate on CO_2 monitor to assist with appropriate ventilation rate.

Notes:

1. Although an EMT may assist with ventilation via an ETT or Alternative/ Rescue Airway, continuous assurance of tube position and adequate ventilation is the responsibility of the ALS practitioner.
2. When available, a carbon dioxide (CO_2) detector must be attached between tube and bag-valve assembly. The EMT should immediately notify the ALS practitioner if CO_2 detector shows a decrease or absence of expired CO_2. Electronic CO_2 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.

PULSE OXIMETRY
STATEWIDE BLS PROTOCOL [OPTIONAL]

Crite

A. Patient with shortness of breath or respiratory distress.

B. Patient with chronic lung disease (COPD, emphysema) who are receiving oxygen therapy.[1]

C. 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 pulsoximeter reading.[2]

System Requirements:

A. [Optional] BLS services may carry a pulsoximeter for use by appropriately trained EMTs.

1. These services must comply with additional Department of Health BLS pulsoximeter requirements including the presence of a BLS service medical director and appropriate personnel training before the service is permitted to carry a pulsoximeter.

B. EMTs may provide optional pulsoximetry monitoring if the EMT has completed training in the use of the pulsoximeter, is approved by the BLS service medical director, and is functioning with a BLS service that is approved to carry a pulsoximeter.

Proced ure:

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 O_2 saturation reading.

3. Monitor O_2 saturation (SpO_2) with pulsoximeter.

a. Assure that reading is accurate. Patient's pulse should correlate with waves or pulsations on pulsoximeter.

b. Possible causes of inability to obtain as accurate SpO_2 reading include:

1) Peripheral vasoconstriction (cold extremities, smoking, chronic hypoxia, or vascular obstruction/deficit).

2) Severe anemia (low hemoglobin).

3) Dirty Fingers or dark/metallic nail polish.

6) Carbon monoxide – Methemoglobin – **Do not apply pulsoximeter to patient with suspected carbon monoxide poisoning.**

4. Use of SpO_2 reading to alter oxygen dosage:

a. The following patients should receive high-flow oxygen at all times

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.

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) SpO_2 reading remains >95% on lower oxygen dose.

2) Patient's color is good (especially lips).

3) Patient's respiratory distress does not increase.

5. Document initial SpO_2 reading after beginning oxygen therapy, and document SpO_2 reading after any changes in oxygen dose or type of delivery system/mask.

No

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. Pulsoximetry 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. Pulsoximetry readings can be falsely high in carbon monoxide poisoning, and it would not be appropriate to decrease oxygen therapy based upon pulsoximetry. For this reason, pulsoximetry should not be used in these patients.

Performance Parameters:

A. Monitor records for appropriate use of high-flow oxygen regardless of SpO_2 readings when appropriate.

B. Monitor records for documentation of SpO_2 readings >95% for all patients who receive less than high-flow 100% oxygen when lower doses are permitted by appropriate protocol.

ECG MONITOR PREPARATION
ASSISTING WITH ALS PROCEDURES
STATEWIDE BLS PROTOCOL

Criteria:

A. This protocol will be used to guide ECG monitor preparation by BLS personnel when an ALS practitioner has requested assistance with set-up of ECG monitor.

B. ECG monitor set-up must occur only when in direct presence of responsible ALS practitioner who is functioning on-scene with an ALS service.

Exclusion Criteria:

A. This protocol does not apply to the application of an AED to a pulseless and unresponsive patient.

B. BLS personnel 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 practitioner who is functioning on-scene with an ALS service.

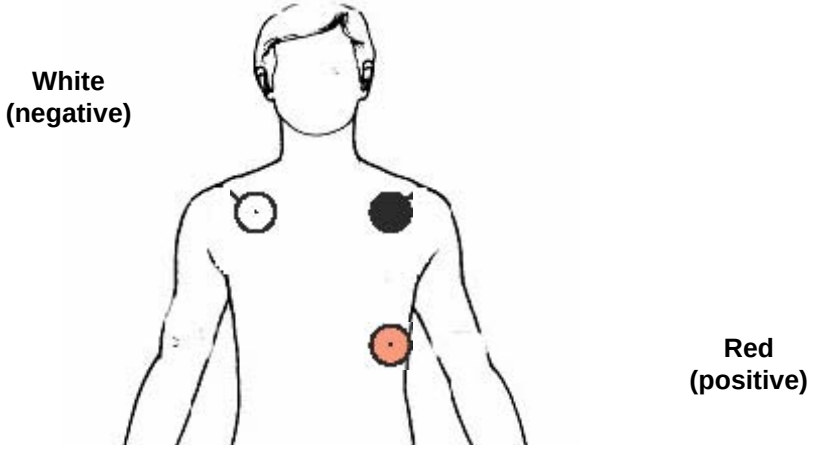
System Requirements:

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. Turn monitor power switch "On".
2. Connect electrode cable to monitor (may be preconnected).
3. Connect 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 as shown below. Note that some ALS services may monitor additional leads or use different electrode lead colors.



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

Notes:

1. Although an EMT may assist with ECG monitoring, the ALS practitioner 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 practitioner who is functioning on-scene with an ALS service, the BLS personnel 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.

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SPINAL IMMOBILIZATION
STATEWIDE BLS PROTOCOL

Criteria:

A. Blunt traumatic injury with risk of possible spinal fracture or spinal cord injury based upon:

1. Symptoms of:
   a. Neck or back pain
   b. Extremity (upper or lower) weakness or numbness, even if symptoms have resolved.
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.
   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.
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. Penetrating trauma to the neck or back with signs/symptoms of neurologic deficit (extremity weakness or numbness).

C. This protocol also applies to inter-facility transfer of any patient that is being transferred due to injuries from a traumatic mechanism unless a medical command physician agrees that the patient may be transported without spinal immobilization.

Exclusion Criteria:

A. No history or no mechanism of injury that would be consistent with spinal injury.

B. Penetrating trauma to the neck or back without neurologic deficit.

C. Penetrating head trauma (for example gun shot wounds to the head).

D. Patients with non-traumatic back or neck pain related to movement, position or heavy lifting.[1]

Procedure:

A. All patients:

1. Provide manual stabilization of the cervical spine[2] until,
   a. Full spinal immobilization has been completed (usually requires a rigid c-spine collar, cervical immobilization device and long spine/back board.

   OR

   b. Immobilization is not indicated as determined by this protocol.

2. **Immobilize the entire spine**[3,4] **in any trauma patient who sustains an injury with a mechanism having the potential for causing spinal injury and who has at least one of these clinical criteria:**[5]
   a. Altered mental status (including any patient that is not completely alert and oriented)
   b. Evidence of intoxication with
   c. A distracting painful injury (including any suspected extremity fracture)
   d. Neurologic deficit (including extremity numbness or weakness- even if resolved)
   e. Spinal pain or tenderness (in the neck or back)

   WARNING: These criteria cannot be assessed on any patient with a language or communication barrier (including young pediatric 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, immobilize the spine.

3. Follow other appropriate treatment or transport protocols.[6]

No

1. Beware - minimal trauma may lead to spinal fractures inpatients with history of Rheumatoid Arthritis, severe osteoarthritis, Down's Syndrome, cancer, or ankylosing spondylitis. If these patients meet the criteria for spinal immobilization, they should be immobilized even if their mechanism was relatively minor (e.g. heavy lifting or twisting.

2. Maintain patent airway while maintaining C-spine stabilization. Use jaw-trust if needed. Consider nasopharyngeal or oropharyngeal airway if decreased LOC and no gag reflex.

3. If spinal immobilization is indicated by any of these clinical criteria, a rigid cervical collar should be applied immediately, and cervical spine stabilization should be continued until the patient has been immobilized with a long spine board and cervical immobilization device. A full-body vacuum splint may be used in place of a long spine board and C.I.D.

4. 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 long spine board.

5. Patients without a mechanism of injury with the potential for causing a spinal injury (as listed in the inclusion criteria above) or those patients without one of the listed clinical findings may have spinal immobilization omitted.

6. During patient assessment, consider signs of spinal cord injury and/or neurogenic shock.

Performance Parameters:

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

MAST SUIT USE
STATEWIDE BLS PROTOCOL [OPTIONAL]

Criteria:

A. Patients with suspected fractures of the pelvis.[1]
1. Traction splinting is preferred for patients with isolated femur fractures.
2. Padded board splints or similar splinting devices are preferred for isolated tibia/ fibula fractures.

B. Patients with shock due to blunt abdominal trauma or other cause. [This is a relative indication, but may be considered if transport time is long.]

Exclusion Criteria:

A. Pulmonary edema or CHF.

B. Chest trauma with possible pulmonary injury.

System Requirements:

A. MAST suit. (MAST suit is optional equipment for BLS and ALS)

B. If carried by service, practitioners must have MAST training as part of their EMT course curriculum or practitioners must complete MAST training/continuing education course or service medical director must verify skill competency.

Procedure:

A. All patients:
1. Remove all of patient's clothing, including undergarments.
2. Place garment under patient with the top of the garment just below the inferior margin of the rib cage.
3. Enclose the leg sections then the abdomen section and secure.
4. If considering MAST as treatment for shock, medical command must be contacted to receive orders to inflate the MAST. This is not necessary when only used as a splint.
5. Open the stopcocks to the appropriate sections:
   a. Abdominal sections must not be inflated in patient that is suspected to be pregnant.
   b. For suspected pelvic fractures, inflate all sections.
   c. For lower extremity fractures, inflate only the affected extremity.
6. Inflate the MAST similar to an air splint, using the foot pump, until slight finger pressure causes indentation in the splint.[3]
7. Close all valves.
8. Recheck the patient's blood pressure.
9. Do not deflate the MAST garment, unless ordered to do so by a medical command physician.[4]

Possible Medical Command Orders:

A. Inflate the garment.

B. Do not inflate the garment.

Notes:

1. MAST are used only to stabilize possible fractures of the femur and pelvis. Other methods of stabilizing these injuries should be considered before application of MAST. Traction splints are preferred over MAST for treatment of possible femur fractures, but MAST may be preferable when a suspected pelvis fracture is associated with other lower extremity fractures.
2. Pediatrics: MAST should be used for pediatric patients. Do not use adult MAST if it is too big for patient.
3. If inflating to treat shock after order by medical command physician, inflate until the Velcro crackles or to the pressure that the medical command physician orders (usually 20-25 mm Hg).
4. Deflating will normally be accomplished by the emergency department personnel.

Performance Parameters:

A. Review cases of MAST use for appropriateness of use and any delays in on-scene time.

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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. Obvious massive 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 duration.

B. In cases of mass casualty incidents where the number of seriously injured patients exceeds the personnel 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 practitioners. 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 as listed above.

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.

N

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.

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 practitioner their intent to revoke the order, the EMS practitioner shall provide CPR if the individual is in cardiac or respiratory arrest.

C. Advance directives, living wills, and other DNR forms that are not valid Pennsylvania Department of Health OOH-DNR orders may not be followed by EMS personnel unless validated by a medical command physician. When presented with these documents, CPR / resuscitation should be initiated and medical command should be contacted as soon as possible.

D. Patient is not in cardiac or respiratory arrest.

Treatment:

A. All patients in cardiac or respiratory arrest:[2]

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. 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 pregnant[3], the EMS practitioner 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, contact medical command immediately.
5. If CPR has not been initiated before the arrival of EMS personnel, the OOH-DNR shall be honored and CPR shall be withheld or discontinued.

a. Assist with initiation of CPR.

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 personnel.

Notes:

1. EMS personnel shall follow this protocol and, when appropriate, shall honor an OOH-DNR within a hospital.
2. 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 practitioner 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.
3. For pregnant patients, the EMS personnel 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.

CARDIAC ARREST – GENERAL
STATEWIDE BLS
PROTOCOL

Criteria:
A. Patient unresponsive, pulseless [illegible] breathe.

a. The vehicle and all patient movement should stop before reanalyzing the rhythm. a. The vehicle and all patient movement should stop before analyzing the rhythm. 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. b. Practitioners must be familiar with the AED used by their service. 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.

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.

System Requirements:
A. Functioning as an AED service is optional for BLS services, but if the service chooses to provide this function, the service must meet the DOH approved service and personnel training requirements for an AED service.

Tre
A. All Patients
1. Refer to accompanying flowchart.

Possible Medical Command Orders:
A. After 3 "no shock advised" messages, if ETA to hospital or ETA of ALS are > 15 minutes, medical command may order termination of resuscitation efforts.

N
1. Ventilations should be given over 1 second. When giving chest compressions, push hard, push fast (100/min), and release completely after each compression. To avoid tiring, rescuer doing chest compressions should be replaced every 5 cycles or 2 minutes. It is essential to minimize interruptions in chest compressions during CPR.
2. 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 and cricoid pressure.

a. **Before intubation**, compression to ventilation ratio is: Adult = 30:2; Child and Infant = 15:2. (**NOTE:** 1-rescuer CPR compression to ventilation ratio is 30:2 for all patients except newborns)

b. **After intubation/ Alternative/ Rescue Airway, avoid overzealous hyperventilation**
After advanced airway is in place, chest compressions should be given by one rescuer at a rate of 100 compressions/ minute without pauses while a second rescuer provides continuous ventilations at a rate of 8-10 breaths/ minute for all patient ages.

c. If unable to ventilate, proceed to Obstructed Airway maneuvers.

3. **Pediatric Guidelines**: 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 is available, adult AED/electrodes should be used on patients > 1 year old. Medical Command Physician may order the use of an adult AED for patients less than 1 year old.
4. Check pulse only after the AED gives a "no shock indicated" message. After each shock is delivered, start CPR immediately without checking the pulse.
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. Biphasic devices may shock at lower energy levels. Equivalent biphasic energy doses must be determined by the service AED medical director using manufacturer recommendations. Consider initial selected energy of 150-200 J for biphasic truncated exponential waveform or 120 J for rectilinear biphasic waveform in either escalating or nonescalating energy doses.
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.
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. 9. During packaging and transport, minimize interruptions of CPR and reanalyze rhythm about every 10 minutes, and deliver additional shocks if advised.

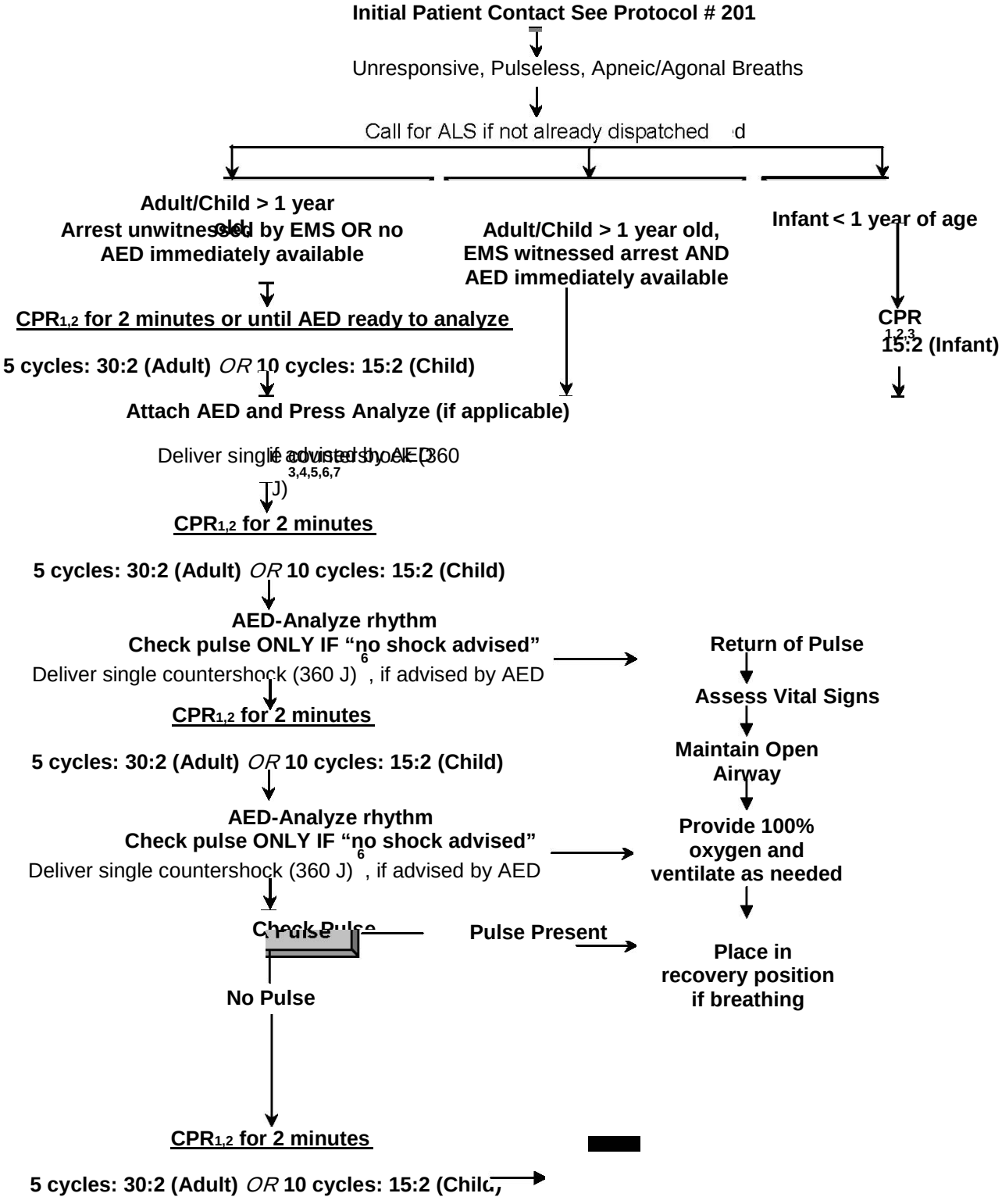
Performance Parameters:

A. System review of percentage of cardiac arrests that are dispatched as cardiac arrests or as the highest category by the dispatch center's EMD classification system. Review for percentage that were offered and received EMD pre-arrival instructions in CPR.

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 all cardiac arrests for rate of return of spontaneous circulation (ROSC) and survival to hospital discharge using the Utstein criteria.


Initial Patient Contact See Protocol # 201
Unresponsive, Pulseless, Apneic/Agonal Breaths
Call for ALS if not already dispatched d
Adult/Child > 1 year old
Arrest unwitnessed by EMS OR no AED immediately available
Adult/Child > 1 year old, EMS witnessed arrest AND AED immediately available
Infant < 1 year of age
CPR1,2 for 2 minutes or until AED ready to analyze
CPR1,2,3 15:2 (Infant)
5 cycles: 30:2 (Adult) OR 10 cycles: 15:2 (Child)
Attach AED and Press Analyze (if applicable)
Deliver single countershock (360 J) if advised by AED3,4,5,6,7
CPR1,2 for 2 minutes
5 cycles: 30:2 (Adult) OR 10 cycles: 15:2 (Child)
AED-Analyze rhythm
Check pulse ONLY IF "no shock advised"6
Return of Pulse
Deliver single countershock (360 J), if advised by AED
Assess Vital Signs
CPR1,2 for 2 minutes
Maintain Open Airway
5 cycles: 30:2 (Adult) OR 10 cycles: 15:2 (Child)
AED-Analyze rhythm
Check pulse ONLY IF "no shock advised"6
Provide 100% oxygen and ventilate as needed
Deliver single countershock (360 J), if advised by AED
Check Pulse
Pulse Present
Pulse
Place in recovery position if breathing
No Pulse
CPR1,2 for 2 minutes
5 cycles: 30:2 (Adult) OR 10 cycles: 15:2 (Child)
CONTACT MEDICAL COMMAND
(if ETA to hospital is >15 min.)

E. Review percentage of cardiac arrest patients that have access to an AED if ALS ambulance does not routinely arrive within 5 minutes.

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.

Tre

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 personnel, or there is evidence that the patient had any signs of life within a few minutes before the arrival of EMS personnel, proceed to step 2 below.[1,2] Otherwise, follow DOA protocol # 322.
2. Initiate CPR with cervical spine stabilization.
3. Additional treatments prior to transport should be limited to:
a. Rapid extrication with spinal immobilization.[3]
b. Assure adequate airway and adequate ventilation.
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.

No

1. If bystanders have initiated resuscitation, EMS personnel 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.

NEWBORN / NEONATAL 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.

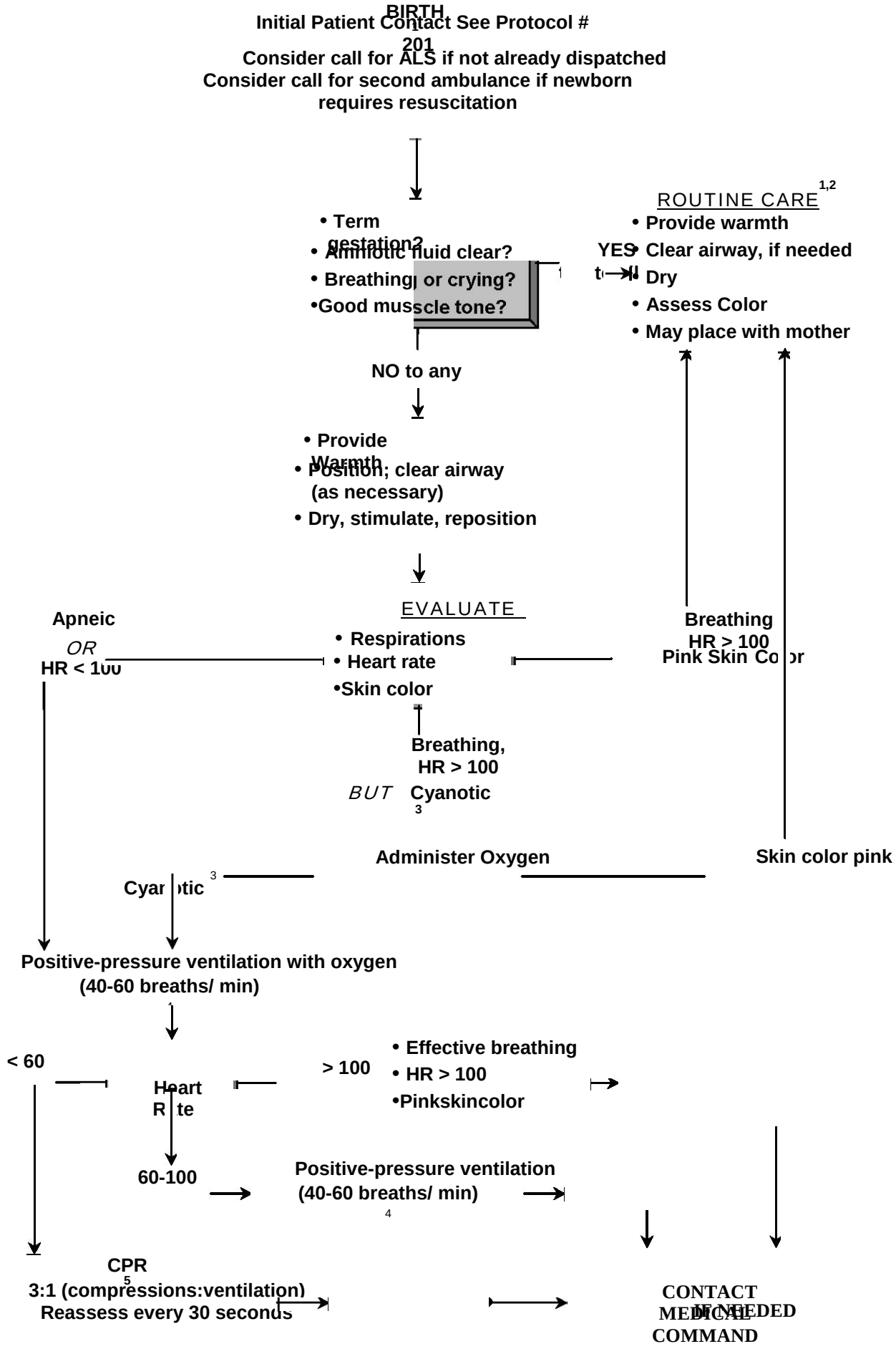
Tre

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 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 ALS personnel is ideal if available.


BIRTH
Initial Patient Contact See Protocol # 201
Consider call for ALS if not already dispatched
Consider call for second ambulance if newborn requires resuscitation
• Term gestation?
• Amniotic fluid clear?
• Breathing or crying?
•Good muscle tone?
YES to all
ROUTINE CARE 1,2
• Provide warmth
• Clear airway, if needed
• Dry
• Assess Color
• May place with mother
NO to any
• Provide Warmth
• Position, clear airway (as necessary)
• Dry, stimulate, reposition
EVALUATE
• Respirations
• Heart rate
•Skin color
Apneic
OR
HR < 100
Breathing HR > 100
Pink Skin Color
Breathing, HR > 100
BUT Cyanotic 3
Administer Oxygen
Skin color pink
Cyanotic 3
Positive-pressure ventilation with oxygen (40-60 breaths/ min)
< 60
Heart Rate
> 100
• Effective breathing
• HR > 100
•Pinkskincolor
60-100
Positive-pressure ventilation (40-60 breaths/ min) 4
CPR 5
3:1 (compressions:ventilation)
Reassess every 30 seconds
CONTACT MEDICAL COMMAND IF NEEDED

ALLERGIC REACTION / ANAPHYLAXIS
STATEWIDE BLS
PROTOCOL

C

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 including:
a. Difficulty breathing and wheezing.
b. Swollen tongue and lips or difficulty swallowing.
2. Common allergens that may lead to allergic reaction include:
a. Bee 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.

B. [Optional] BLS services may carry epinephrine auto-injectors for administration by the service's EMTs.

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.

1. These services must comply with Department of Health epinephrine auto-injector requirements for these services and for the training of service personnel before the service is permitted to stock and carry epinephrine auto-injectors.
2. These services must carry 2 adult and 2 pediatric dose epinephrine auto-injectors that are stored and maintained in a manner consistent with Department requirements.

Tre

A. All patients treated by BLS services 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, assist with the administration of single unit dose of epinephrine via auto injector.[2] [EMT ONLY]
a) **Adult dose 0.3 mg (e.g. EpiPen)**[3][4][5][6][7]
b) **Pediatric dose 0.15 mg (e.g. EpiPen Jr.)**
2) Monitor vital signs and reassess patient.
3) Contact medical command if the patient has a prescribed epinephrine auto-injector.
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, if available.[8]
6. Transport.

B. All patients treated by EMTs functioning with BLS services 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 symptoms
    a. For severe symptoms
        1) Administer a single unit dose of epinephrine
            a) Via auto-injector:[4,5,7]
                i) **Adult dose 0.3 mg (e.g. EpiPen)**
                ii) **Pediatric dose 0.15 mg (e.g. EpiPen Jr.)**
        2) Monitor vital signs and symptoms
    b. Contact Medical Command
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 pulsoximetry, [OPTIONAL].[8]

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 service 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.

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.

8. See Pulsoximetry protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%.

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

C

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:

1. EMT that has completed the bronchodilator module through the EMT curriculum or continuing education may assist the patient with administration of a bronchodilator.
2. **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 service medical director.
3. **C. [Optional]** BLS services may carry CPAP devices for use by the service's EMTs. These services must assure that all EMTs using CPAP have completed the DOH BLS CPAP training and have been approved by the service medical director.
   1. These services 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.
   2. These services must be approved to carry pulse oximeters – See Protocol #226.
   3. The service medical director must oversee the CPAP training, use of CPAP, 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 pulsoximetry[1] [OPTIONAL – MANDATORY IF USING CPAP]
3. Continuous Positive Airway Pressure (CPAP) [OPTIONAL][2]
   a. Apply CPAP to adult patient if patient does not have any contraindication to CPAP AND has **at least TWO** of the following after high concentration oxygen:
      1) Pulse oximetry reading less than 90%
      2) Use of accessory muscles during respiration
      3) Severe dyspnea
   b. If CPAP is applied[3]
      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. Assist patient with his/ her bronchodilator inhaler [EMT ONLY] for conditions associated with wheezing.[4,5,6]
   a. Must be a "short-acting" rapid onset, **bronchodilator**.[7,8]
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.

Possible Medical Command Orders:

A. May order additional doses of patient's bronchodilator.

Notes:

1. See Pulsoximetry Protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%.
2. CPAP is not indicated if patient:
   a. has altered mental status and/or cannot follow commands.
   b. ≤ 14 y/o, unless ordered by Medical Command
   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.
3. 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 service 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.
4. 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.
5. 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.
6. If unsure of the appropriate action, contact Medical Command for further direction.
7. If unable to contact medical command, may repeat previous dose of bronchodilator inhaler 20 minutes after initial dose.

	6. The following are commonly prescribed short-acting, rapid-onset, beta-2 agonist inhalants that the EMT may assist with administration:
Generic Name	
Metaproterenol Sulfate	
Terbutaline Sulfate	
Isoetharine Mesylate	
Albuterol and Ipratroprium	
Isoproterenol Hydrochloride/Phenylephedrine Combo	
Isoproterenol Hydrochloride	
Pirbuterol Acetate	
Isoproterenol Sulfate	
Metaproterenol	
Albuterol	
Biotolerol Albuterol	

Brethaire
Bronkometer
Combivent
Duo-medihaler
Isuprel Mistometer
Maxair
Medihaler-Iso
Meraprel
Proventil
Tornalate
Ventolin

7. The following are drugs that **SHOULD NOT** be used:	
Long-acting, Delayed-Onset, Bronchodilators	
Generic Name	
Salmeterol Xinafoate	
Corticosteroids	
Generic Name	
Flunisolide	
Triamcinolone Acetonide	
Beclomethasone Dipropionate	
Dexamethasone Sodium Phosphate	
Dexamethasone Sodium Phosphate	
Fluticasone Propionate	
Beclomethasone Dipropionate	
Anticholinergics	
Generic Name	
Ipratropium Bromide	
Non-Steroidal Anti-inflammatories	
Generic Name	
Cromolyn Sodium	
Nedocromil Sodium	
Over-the-counter Drugs	
Generic Name	

Brand Name	
Primatene Mist	Epinephrine

Performance Parameters:

A. Review every case of EMT CPAP use or EMT-assisted bronchodilator inhaler 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
STATEWIDE BLS
PROTOCOL

C

A. 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, nausea/vomiting or sweating
4. Possibly worsened by exertion
5. Patient over 30 y/o
6. Patient with history of recent cocaine use

Exclusion Criteria:

A. Chest pain, probably not cardiac origin.
1. a. Pleuritic chest pain- worsens with deep breath or coughing.
   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.
2. Consider call for ALS if available. See Indications for ALS Use protocol #210
3. Apply oxygen (High concentration if patient also has difficulty breathing or hypoperfusion) [1]
4. Monitor pulsoximetry [OPTIONAL]
5. Assist patient with his/her prescribed nitroglycerin based upon the following: [2,3,4,5] [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 within the last 24-48 hours. [6]
   c. Patient is currently experiencing chest pain or discomfort.
   d. Blood pressure is > 100 systolic.
6. Transport.
7. Monitor vital signs and reassess.
8. Contact medical command if EMT has assisted with nitroglycerin. [7]

Possible Medical Command Orders:

A. Medical command may order additional doses of nitroglycerin.

Notes:

1. See Pulsoximetry protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%. [2]
2. 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.
3. Nitroglycerin must be prescribed for the patient, and EMS must identify and administer the prescribed dose (sublingual “tablet” or “spray”).

4. Nitroglycerin should not be given to a child.

5. If unsure of the appropriate action, the EMT should contact Medical Command for further direction.

6. Nitroglycerine 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 (phosphoodiesterase inhibitors). Nitroglycerine should not be given within 24 hours of taking Viagra (sildenafil) or Levitra (vardenafil) or within 48 hours of taking Cialis (tadalafil).

7. 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.

BLEEDING CONTROL
STATEWIDE BLS PROTOCOL

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

Serious or Uncontrolled Bleeding?

NO — Apply dressing / bandage if possible.

YES

Extremity Bleeding?

YES — Apply direct pressure

AND/OR

Apply pressure to pressure point

AND/OR

Apply tourniquet[1,2,3]
(Consider tourniquet as initial method of bleeding control in severe extremity bleeding)

NO — **Open abdominal or chest wound bleeding?**

YES — **See Multisystem Trauma or Traumatic Shock Protocol #602**

NO — Apply direct pressure

If bleeding continues, apply Hemostatic Agent[4,5] (if available):
(1. Pack wound with approved agent,
2. Apply direct pressure,
3. Apply pressure dressing
4. Once applied, do not remove dressing)

BLEEDING CONTROL
STATEWIDE BLS
PROTOCOL

Criteria:

A. Patients with bleeding or open wounds

Exclusion Criteria:

A. Internal bleeding

B. Vaginal bleeding

System Requirements:

A. [Optional] EMS services may carry approved hemostatic agents for use by appropriately trained EMS personnel if the service complies with the following additional requirements:

1. The service must have a medical director.

2. The service and service medical director must assure that all personnel that will potentially use the hemostatic agent are appropriately trained in its use.

B. If a service chooses to carry a hemostatic agent (optional), the service medical director must select an agent that is approved as defined on the Pennsylvania Ambulance Equipment List.

No

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 personnel may use commercial (tactical/military-type) tourniquets or may use a cravat or blood pressure cuff as a tourniquet. Do not use rope, wire or other thin strictures that may lead to more damage.
3. When a tourniquet is applied
   a. Apply it as far distally as possible
   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
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.
2. Control external bleeding.
3. Administer oxygen (high concentration if Category 1 trauma criteria).
4. Spinal immobilization as appropriate – See Cervical Spine Immobilization Protocol # 261.
5. Treat specific injuries.
   a. As appropriate 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 MAST (if available) for splinting[4] – See MAST Suit Use Protocol # 253.
   a. Traction splinting is preferred for isolated femur fractures.
   b. Padded board splints or other similar devices are preferred for isolated tibia/fibula fractures, but if tibia/fibula fractures are associated with suspected pelvis fractures, MAST may be used for splinting.
9. Transport the patient ASAP as per Trauma Destination Protocol – See Protocol # 180.
10. Monitor pulsoximetry [OPTIONAL][5]
11. Monitor vital signs and reassess.

Possible Medical Command Orders:

A. Medical command may order inflation of MAST suit.

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.

4. Pelvic binder splinting devices (circumferential commercial devices that compress the pelvis) are also appropriate splinting devices.

5. See Pulsoximetry Protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%.

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.

HEAD INJURY
STATEWIDE BLS
PROTOCOL

Criteria:

A. Head injury and altered mental status (GCS <15).

Exclusion Criteria:

A. Head injury, but alert and oriented with Glasgow Coma Scale = 15.

Treatments:

A. All patients:

1. Initial Patient Contact – see Protocol #201.
   a. Consider ALS if available. See Indications for ALS Use protocol #210
   b. Consider air ambulance. See Trauma Destination protocol #180
2. Immobilize cervical spine.[1]
3. Assure a patent airway.
4. Administer high concentration oxygen.
5. Assure adequate ventilation. Assist ventilation, if necessary. **AVOID OVERZEALOUS HYPERVENTILATION.**
   a. If unresponsive to pain or extensor posturing to pain or pupils are unequal or non-reactive, hyperventilate at 20 bpm for an adult, 30 bpm for a child, or 35 bpm for an infant.[2]
   b. Otherwise ventilate at 10 bpm for an adult, 20 bpm for a child or 25 bpm for an infant.
6. Also follow Multisystem Trauma/ Shock Protocol # 602, if applicable.
7. Place sterile dressing over soft tissue injury sites as time permits.
   a. Do not apply pressure to open or depressed skull fracture.
   b. Treat eye injuries appropriately.
8. Transport according to Trauma Destination protocol # 180.[3]
9. Monitor pulsoximetry [OPTIONAL], but all patients with GCS < 15 should continue to receive high concentration oxygen.[4]
10. Monitor vital signs and reassess.

Notes:

1. Avoid any straps or constriction across the neck since this may increase intracranial pressure.

2. Unresponsiveness or extensor posturing to painful stimulus corresponds to GCS motor score of 1-2.

3. Patients who follow commands do not need to be transported to a trauma center unless other criteria exist for transport to a trauma center.

4. See Pulsoximetry protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%.

Performance Parameters:

A. Patients with GCS < 13 should be transported to a trauma center when possible.

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 circumstances:
   a. If the impaled object is in the cheek and bleeding profusely or obstructing the airway:
      1) Maintain airway and control bleeding as follows:
         a) Remove the object if this can easily be done.
         b) Stabilize object with sterile dressing, place cup over eye and secure.
         c) If the impaled object is not in the cheek, stabilize object with bulky dressing and secure.
         d) If patient is impaled on stationary object:
            1) If possible, remove object with patient.
            2) Secure object with bulky dressing and transport.
   b. If the impaled object is in the eye:
      1) Stabilize object with bulky dressing and secure.
      2) Cover unaffected eye.
   c. If the impaled object is not in the cheek or eye:
      1) Stabilize object with bulky dressing and secure.
      2) Cover unaffected eye.
   d. If patient is impaled on stationary object:
      1) If possible, remove object with patient.
      2) Secure object with bulky dressing and transport.
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 width 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:

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

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 Mulitsystem 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 in a 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 personnel 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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8. Monitor vital signs and reassess

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. Immobilize C-spine, if indicated – See Cervical Spine Immobilization 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.
3. Administer high concentration oxygen[1,2] if:
   a. Coughing or short of breath.
   b. Exposure to smoke in a confined space.
   c. Facial burns
   d. Burn area greater than 15% BSA.
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.): Flush with cool water.
   b. Chemical burns:
      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.[3]
   c. Electrical burns:
      1) Dress entrance and exit wounds and other injuries.
6. Care of burned skin:
   a. Cover burned areas with dry sterile burn sheets/ dressings or sterile commercial burn sheets/ dressings.
   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. Transport to a burn center if:
      1) The patient has burns to more than 15% BSA or burns to the face or hands, and
      2) The patient does not meet trauma triage criteria, and
      3) 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.

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. See Pulsoximetry protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains > 95%.
3. 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 unentrapped 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)

Treatments:

A. All patients:

1. Initial Patient Contact – see Protocol # 201.
2. 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:**

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. Transport.
7. Perform ongoing assessment.

C. Frostbite:

1. Keep patient warm while exposing affected part.
2. Apply loose sterile dressing to affected part.
3. Do not:

a. Rub effected part or
b. Break blisters.
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. Services that use optional pulsoximetry monitors should not use them in hypothermic patients since pulsoximeters 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 extracorporial 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

C

A. Heat Stroke[1] – 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.

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A. All patients:

1. Initial Patient Contact – see Protocol # 201.
2. Consider call for ALS if available. See Indications for ALS Use protocol #210.
3. Administer oxygen[2]
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.[3])
   b. If shivering begins, slow cooling process.
   c. Do not give aspirin or other medications by mouth.
   d. Transport immediately.
   e. Perform ongoing assessment.

B. Heat Stroke:

C. Heat Exhaustion:

1. Remove the patient from the heat source.
2. Administer oxygen.
3. Remove excess clothing.
4. Actively cool the patient:
   a. Apply cool compresses.
   b. Allow patient to drink cool fluids (ideally commercial sport/rehydration drinks)[4] if the patient is alert and oriented and without nausea.
5. Transport.
6. 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. See Pulsoximetry protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%.
3. **Do not delay transport if these cooling modalities are not immediately available.**
4. Do not permit the patient to drink if altered mental status or abdominal pain.

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.

Treatments:

A. All patients

1. Initial Patient Contact – see Considerations.
   a. Consider 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 accident is possible, stabilize cervical spine and follow Cervical Spine Immobilization protocol # 261.[1]
3. Maintain airway.
4. Apply oxygen (High concentration if respiratory distress or altered level of consciousness) and suction if secretions block the airway. Obtain pulse oximetry reading [OPTIONAL].[2]
5. Consider hypothermia. If present – See Hypothermia Protocol # 331.
   a. Handle the patient gently and carefully.[3,4,5]
6. Transport immediately.
7. Monitor vital signs and reassess.

Notes:

1. Diving 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. See Pulsoximetry protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains > 95%.
3. Rough handling may cause the hypothermic patient to develop a fatal arrhythmia.
4. If SCUBA incident with rapid ascent, transport on the left side of the body with the head down.
5. Since respiratory problems may be delayed, all patients should be transported. Contact medical command if patient refuses transport.

ALTERED LEVEL OF CONSCIOUSNESS/ DIABETIC EMERGENCY
STATEWIDE BLS
C PROTOCOL

A. Patient with new decrease in level of consciousness. Causes may include:

1. Hypoglycemia.
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

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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.[1]
4. Examine patient for evidence of specific causes (for example Stroke, Poisoning, Head Injury, or Seizure) and follow other protocols when appropriate:
   a.
   b. Medi
   c. cal alert Medicine
   d. container
   e. tag stings or
   f. s. bites.
   g. Tongue bitten
   h. Stroke wounds trauma of urine.
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. Administer oral glucose if hypoglycemia is suspected and patient can swallow.[2]
7. Transport immediately.
8. Re-assess the patient.

No

1. See Pulsoximetry Protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%.
2. 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.

Performance Parameters:

A. Review all uses of oral glucose for appropriate assessment for non-diabetic causes of altered consciousness.

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d) Although not parts of the Cincinnati Prehospital Stroke Scale, sudden onset of unilateral leg weakness or sudden decrease in speech clarity are also signs of acute stroke.

SUSPECTED STROKE
STATEWIDE BLS
PROTOCOL

C

A. Patients may have the following clinical symptoms:
1. Altered level of consciousness
2. Impaired speech
3. Unilateral weakness / paralysis
4. Facial asymmetry / droop
5. Unilateral numbness
6. Problems with coordination or balance
7. Partial loss of peripheral vision
8. Severe headache
9. Vertigo

Exclusion Criteria:

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

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A. All patients:
1. Initial Patient Contact – see Protocol #201
2. 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. an oral or nasal airway as appropriate.
3. Apply oxygen at high concentration if altered mental status)
4. Monitor pulsoximetry [Optional].[1]
5. Obtain patient history, (i.e. OPQRST) and examine patient.
a. Establish time of symptom onset is extremely important.[2]
b. Assess Cincinnati Stroke Scale[3]
6. If stroke indicated by the Cincinnati Stroke Scale **AND** patient can be delivered to the receiving facility within 3 hours of symptom onset[4], then
a. Package patient and transport ASAP.[5]
b. Contact medical command and receiving facility as soon as possible.
7. **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.

No

1. See Pulsoximetry protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%.
2. 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 receiving hospital capable of treating acute strokes within 3 hours from onset of symptoms. If the patient awoke with their symptoms, then the symptom onset is not considered to be < 3 hours.
3. **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.

4. 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.

5. Report time of symptom onset and abnormal findings from Cincinnati Prehospital Stroke Scale to medical command physician.

Performance Parameters:

A. Review on scene time for all cases of suspected stroke with time of symptom onset less than 3 hours

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.
   1. 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.

B. Normal delivery and Newborn Care:

1. Assist with vaginal delivery of infant[1]
   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. Clamp and cut cord 4 finger widths (4-6 inches) from infant.
7. Assess and record APGAR scores at 1 and 5 minutes after delivery.
8. Deliver and preserve placenta (**DO NOT** pull on cord or placenta).[3]
9. Monitor vital signs and reassess
10. Transport

C. Complicated delivery: (mother with unstable vital signs, arm or leg presentation, prolapsed umbilical cord, or breech delivery)

1. Prepare for immediate emergent transport.
2. Handle delivery based upon complications, as follows:
   a. If breech delivery, attempt to gently deliver head, but **DO NOT** pull on 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.
   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 practitioner 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 receiving hospital and medical command while enroute 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)	No response	Grimace or weak cry[1]	Strong cry
	A = Activity (Muscle Tone)	Limp	Some flexion of arms and/or legs	Cough/ sneeze or withdraws foot and cries

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

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.

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.

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. Drug overdose
4. Post-ictal after seizure
5. Head trauma

Exclusion Criteria:

A. None

Treatment/Procedure:

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.

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. See Indications for ALS Use protocol #210

3. Assess for possible underlying medical conditions such as hypoglycemia, drug overdose, trauma, hypoxia, or post-ictal from seizure.

a. If present, use the applicable protocol

4. Attempt to establish a rapport with the patient.[1]

5. 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

a. Restrain the patient in the following circumstances:

1) Law enforcement personnel order restraint and transport

2) Mental health delegate on scene has initiated involuntary commitment papers (i.e. 302)

3) Medical command physician orders restraint and transport

4) The patient is a direct threat to EMS personnel and must be restrained to avoid injury.

5) The patient exhibits suicidal thoughts or actions.

b. If adequate personnel are not immediately available to restrain the patient, EMS personnel shall remain in a safe proximity to the scene and shall notify law enforcement or local mental health agency of the patient's location and actions.

6. If the patient struggles violently against the restraints[2]

a. Call for ALS if available

b. Administer high concentration oxygen via NRB mask.

7. Contact medical command for an order to restrain and transport the patient against his/her will, if not done previously.

a. Restraints during transport should restrict the patient enough to reasonably prevent escape from the vehicle or harm to EMS personnel.

b. EMS personnel must be with a patient at all times if the individual was restrained using this protocol.

9. Monitor vital signs and reassess

a. Reassess and document neurovascular function of restrained extremities.

8. Transport

2. Initial Patient Contact – see Protocol # 201.

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]
5. Use soft restraints to prevent the patient from injuring him or herself or others.[7]
   a. If the handcuffs or law enforcement devices are used to restrain the patient, a law enforcement officer should accompany the patient in the ambulance
   b. It is preferable that a law enforcement officer follows the ambulance in a patrol car to the receiving facility if physical restraint is necessary.
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. Evaluate circulation to the extremities frequently.
9. Thoroughly document reasons for restraining the patient, the restraint method used, and results of frequent reassessment.

Possible Medical Command Orders:

A. Medical command may order restraint and transport of a patient against his/her will.

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 personnel 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 in a hog-tied or prone position.**
5. **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 snuggly just above the knees is effective in decreasing the patient's ability to kick.
7. Padded or leather wrist or ankle straps are appropriate. 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 of nose except with a surgical mask or a NRB mask with high flow oxygen. 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 services may have additional JCAHO 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.

POISONING/TOXIN EXPOSURE (INGESTION / INHALATION / ABSORPTION / INJECTION)
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 bites or substances injected through the skin

Exclusion Criteria:

A. None

Treatment:

A. All patients:

1. Initial Patient Contact – see Protocol #201.
   a. **WARNING: EMS personnel must not enter confined spaces with potential toxic gases (e.g. manure pits, silos, spaces with carbon monoxide, spaces with industrial gases) unless personnel 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.
3. Administer high concentration oxygen, if altered level of consciousness, shortness of breath, abnormal respiratory rate, or patient coughing.
4. [OPTIONAL] Monitor pulsoximetry.[1]
5. Consider call for ALS if available, particularly for decreased LOC. See Indications for ALS Use protocol #210.
6
   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 services should not transport dangerous items (e.g. toxic chemicals that are not sealed in their original containers, live snakes, etc….)
   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. Do not give anything by mouth to a patient with an altered level of consciousness or an unconscious patient.[2]
8. 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).[3,4,5]
      3)
   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.
      4) Administer 100% oxygen.
         a) **WARNING: Pulsoximetry monitors give false readings in patients that have been exposed to carbon monoxide or cyanide, and these devices should never be used in these patients.**

c. **For Absorbed Toxins:**

1) Remove contaminated clothing.
2) Flush affected area.
   a) Liquid substance - Irrigate with copious amounts of room temperature water. Do not contaminate uninjured areas during flushing.
   b) Dry substances - With gloves and appropriate PPE, brush remaining powder from skin and clothing, then irrigate with copious amounts of water.
   c) Eyes[6] - Flush affected eyes continuously with water of saline if eye exposure.

d. **For Injected Poisons/ 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
2) delay transport while attempting to capture or kill a snake.
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 below the level of the patient's heart.
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.**

9. Transport as needed.

10. Monitor vital signs and reassess.

11. Contact Medical Command or Poison Control Center[3] if additional direction is needed.

Possible Medical Command Orders:

A. Administration of activated charcoal (if available) may be ordered[4,5]:

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. See Pulsoximetry protocol #226. Pulsoximetry may only be used by BLS services and personnel that meet DOH pulsoximetry requirements. If used, pulsoximetry must not delay the application of oxygen. Record SpO_2 after administration of oxygen. If pulsoximetry is used and patient does not tolerate NRB mask, may switch to nasal cannula as long as SpO_2 remains >95%. Pulsoximetry is not accurate in patients with suspected exposure to carbon monoxide or cyanide and shall not be used in these situations.

2. Contact Poison Control Center or Medical Command before administering anything by mouth.

3. National **Poison Control Center telephone number is 800-222-1222**. EMS personnel must follow instructions from Poison Control Center unless the orders are superceded by orders from a medical command physician. These instructions must be documented on the PCR.

4. Activated charcoal (if available) may only be given by order of medical command or poison control.

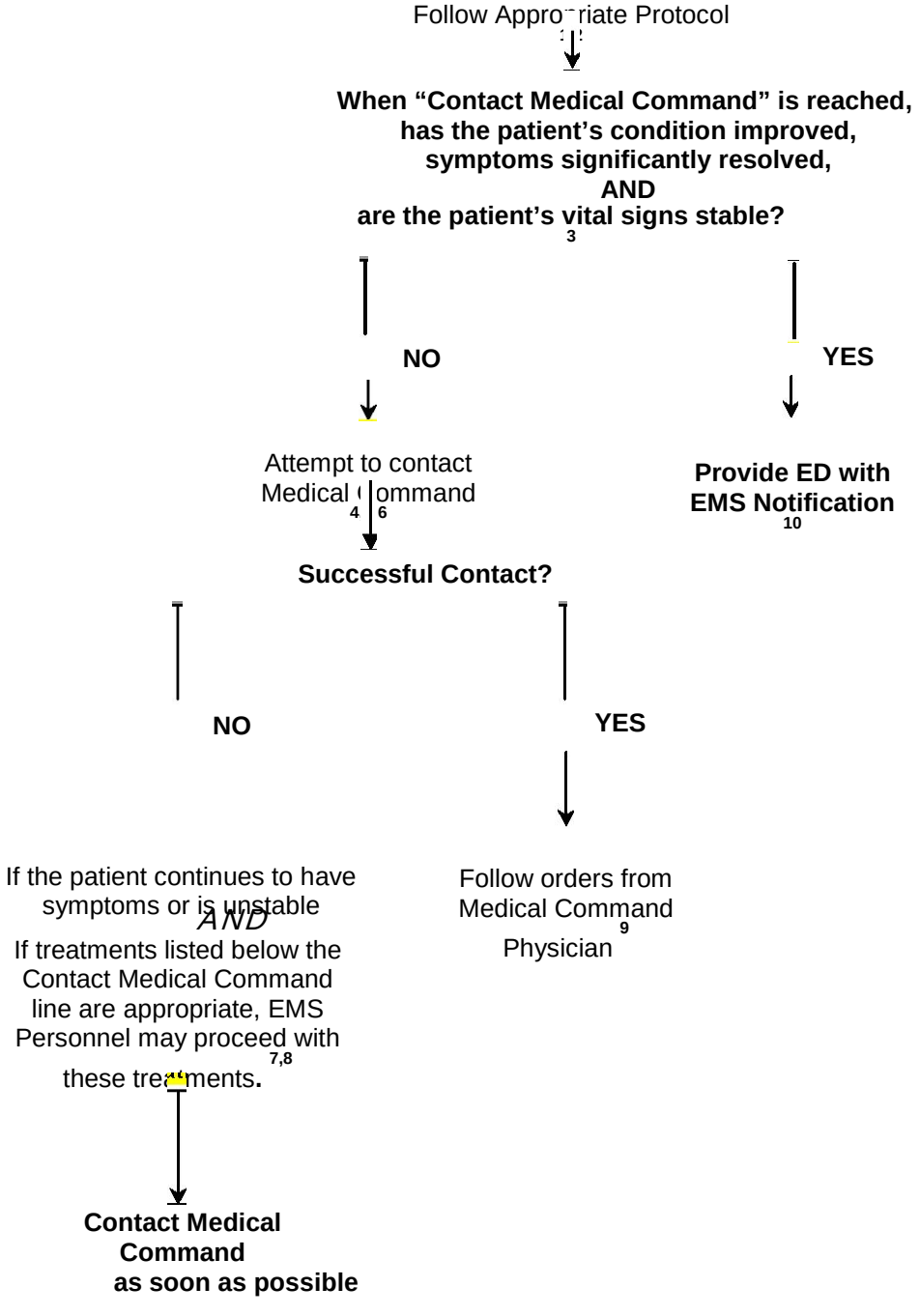
5. Contraindications to activated charcoal:
   a. Patient unable to swallow/protect airway.
   b. Hydrocarbons ingestion (e.g. gasoline)
   c. Heavy metal substance ingestion (e.g. iron)
   d. Caustic substance ingestion (e.g. liquid drain cleaner or milk pipe cleaner)

6. 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.

MEDICAL COMMAND CONTACT
STATEWIDE BLS PROTOCOL



MEDICAL COMMAND CONTACT
STATEWIDE BLS PROTOCOL

Purpose of Medical Command contact:

A. By the Pennsylvania EMS Act and its regulations, EMS personnel will provide care within their scope of practice and will follow Department of Health-approved protocols or Medical Command orders when delivering EMS care.

B. Medical Command must order any ALS treatment (medication or procedure) that an EMS practitioner provides when that treatment is not included in or is a deviation from the Department-approved protocols. This applies to all ALS care, including interfacility transport.

C. In certain circumstances, as defined by the Statewide BLS Protocols, medical command must be contacted by EMS (BLS or ALS) personnel.

D. Protocols cannot adequately address every possible patient scenario. The Pennsylvania EMS System provides a structured Medical Command system so that EMS personnel can contact a Medical Command Physician when the personnel are confronted with a situation that is not addressed by the protocols or when the EMS personnel have any doubt about the appropriate care for a patient.

4. Patients with unusual presentations that are not

E. In some situations and geographic locations, it is not possible for an EMS practitioner 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 practitioners 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.

5. Patients with rare illnesses or injuries that are not frequently encountered by EMS personnel.
6. Patients who may benefit from uncommon treatments (e.g. unusual overdoses with specific antidotes).

H. EMS Service Medical Directors may require more frequent contact with medical command than required by protocol for ALS personnel who have restrictions on their medical command authorization. EMS Service 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.

addressed in protocols.

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 EMS service name 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 facilities Emergency Department (e.g. Inter-facility transfer to an acute care facility when the patient is a direct admission to an inpatient floor).

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.

Not

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
3. For example, a patient with chest pain may have almost complete resolution of pain after oxygen, aspirin, and several nitroglycerins 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 services 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 practitioner if unable to contact medical command if the ALS practitioner believes that these treatments are appropriate and necessary.
8. Attempts to contact medical command must be documented on the PCR, and the practitioner 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 practitioner 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, 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 practitioner 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 will:
   a. Request that the physician on scene function in an observer capacity only.
   b. Participate in 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 personnel or if the EMS personnel are uncomfortable following the orders given by the physician, unless these options are available, EMS personnel will:

1) Request that the physician accompanies the patient to the receiving facility in the ambulance.
2) Enforce 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 PaPCR.
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 practitioner.

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 practitioner 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 ambulance service's routine response:

1. The medical command physician may provide on-scene medical command orders to practitioners of the ambulance service if all of the following occur:
   a. The ambulance service has a prearranged agreement for the medical command physician to respond and participate in on-scene medical command, and the ambulance service 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 ambulance service to provide on-scene medical command.
   c. All orders given by the on-scene medical command physician must be documented either on the PaPCR for the incident or on the medical command facilities 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 personnel must be able to identify the on-scene medical command physician as an individual who is associated with the service to provide on-scene medical command.

2. If a medical command physician who is not associated with the ambulance service 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 personnel 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 personnel 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.

Pr

A. All Patients with Service

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 personnel 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, personnel 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 service base or PSAP and request that additional manpower respond to transport the service animal.
5. Personnel 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 ambulance service describing the reasons that the service animal was not transported with the patient.

Notes:

1. EMS services 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.

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 personnel 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 supercede an ambulance service's policy; however this general information may augment a service's policy.

C. These guidelines do not comprehensively cover all possible situation, and EMS practitioner judgment should be used when the ambulance service's policy does not provide specific direction.

Pr

A. 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.

B. Consider wearing gloves for all patient care and other activities within the crime scene.

C. 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 arrived.
3. Do not allow anyone to enter the scene until police arrive.

D. Notify the investigating law enforcement officer of any alteration of the crime scene by EMS personnel including:

1. Any movement of furniture, tables, etc., by providers.
2. The original position of the victim.
3. If you turned on lights.
4. What you touched, moved, etc.

E. 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.

F. 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
   b. Knives should be bagged and 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.

G. Listen for conversations overheard at the crime scene. Report any conversations to law enforcement officials.

Not

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.

INDWELLING INTRAVENOUS CATHETERS / 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.

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 personnel during the transport:

1. This includes devices like wound vacuum drains, nephrostomy tubes, 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.

Pro

A. All Patients:

1. BLS personnel 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 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 intervention[2]. 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 facility[2] for removal and/or replacement.

1.

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.

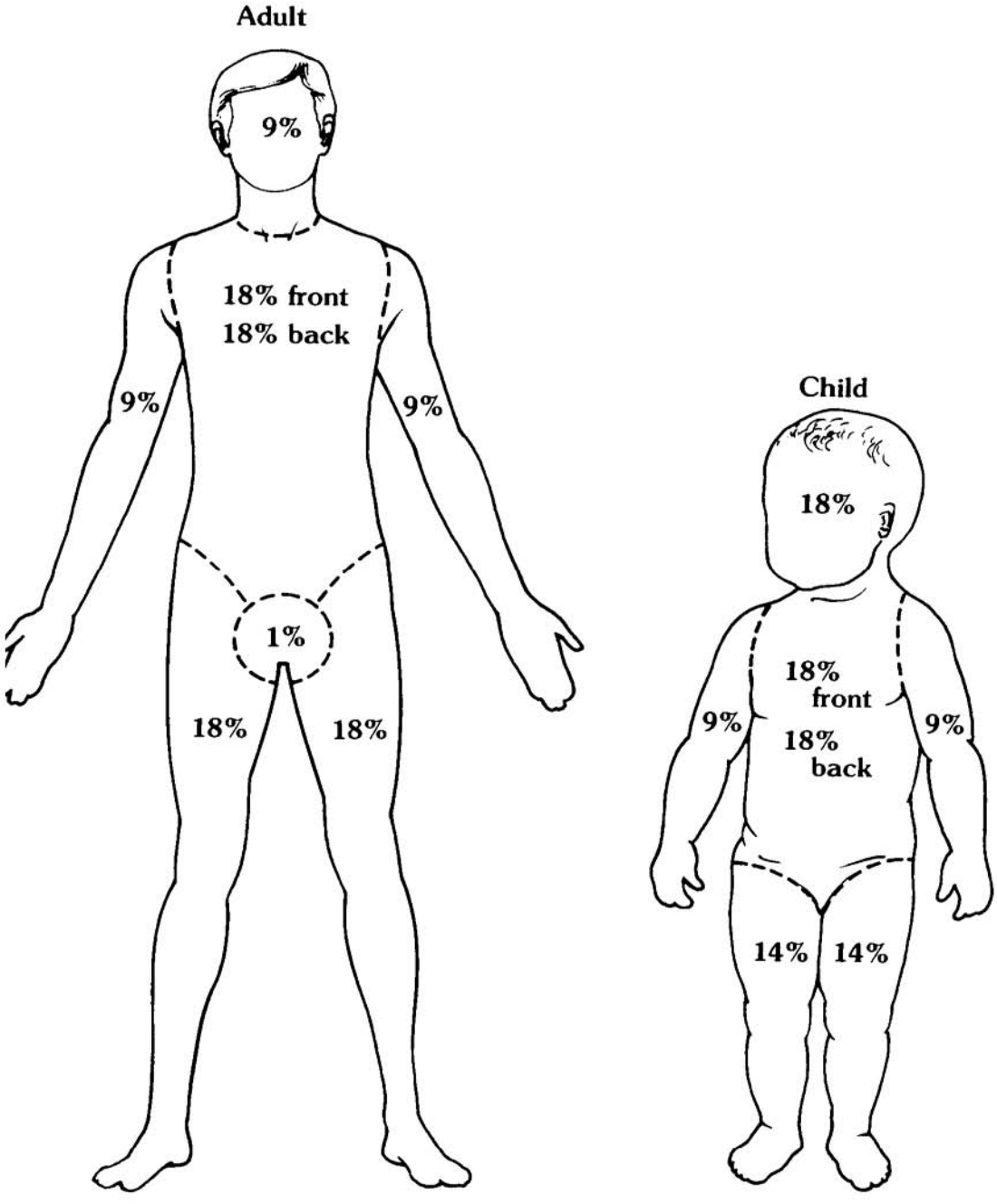
RESOURCE TABLES

Page

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

[1] Response to catheter in nostril (tested after pharynx is cleared)
[2] Tangential foot slap

BURN CHART - RULE OF NINES



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.

GLASGOW COMA SCALE

EYES OPEN:

Spontaneously.....4
To verbal command.....3
To pain.....2
No Response.....1 **Score** (1 to 4) = ☐

MOTOR RESPONSE:

To verbal command:

Obeys.....6

Painful Stimulus [1] ***:***

Localizes pain.....5
Flexion-withdrawal.....4
Flexion-abnormal (decorticate rigidity).....3
Extension (decerebrate rigidity).....2
No response.....1 **Score** (1 to 6) = ☐

VERBAL RESPONSE [2] **:**

Oriented, converses.....5
Disoriented, converses.....4
Inappropriate words.....3
Incomprehensible sounds.....2
No response.....1 **Score** (1 to 5) = ☐

GLASGOW COMA SCALE TOTAL SCORE (3 to 15) **=** ☐

[1] apply knuckle to sternum, observe arms

[2] arouse patient with painful stimulus if necessary

GLASGOW PEDIATRIC COMA SCALE

EYES OPENING	**Score**	
Spontaneously	4	
To verbal command	3	
To pain	2	
No response	1	

BEST MOTOR RESPONSE	**Score**	
Flexion-withdrawal	6	
Flexion-abnormal (decorticate rigidity)	5	
Extension (decerebrate rigidity)	4	
No response	1	

BEST VERBAL RESPONSE	**Score**		
0-23 Months	**2-5 Years**	**> 5 Years**	
Smiles, coos appropriately	Appropriate words & phrases	Oriented & converses	
Cries, consolable	Inappropriate words	Disoriented & converses	
Persistent cries and/or screams	5	Inappropriate words	
Grunts	4	No response	
No response	3		
	2		
	1		

Appendices