OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

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Austin-Travis County EMS
Interim System Medical Director

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OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

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Atypical Protocol Utilization and Online Medical Direction

Standard:

Provide direction on managing patients and circumstances that are outside the protocols.

Purpose:

Give direction for providers who encounter complicated, unusual, and atypical patient encounters and establish an orderly method by which clinical issues can be rapidly addressed.

Application:

1. Clinical encounters requiring use of this protocol may be divided into two types:
   - Those whose clinical situation is covered by existing protocol but who are presenting a clinical/administrative challenge (e.g., clarification of a COG, patient destination, other healthcare provider issues, etc.) and require non-medical control guidance or
   - Those whose clinical situation is not covered by existing protocol (e.g., modification of drug dosage, patient medication not addressed in protocol or unfamiliar to a provider, termination of resuscitation not covered in current policy) and thus require medical control orders via on-line medical consultation (OLMC).
2. Patients (b) requiring OLMC shall contact medical control as described in steps 4 and 5 below. The provider requesting OLMC must be at the scene with the patient.
3. The first call for operational/administrative issues related to an individual patient or patients will be placed to an organization's designated clinical supervisory personnel (e.g., DMO, FMO, etc.). The call should be placed via a recorded line through EMS Communications. If the clinical supervisory personnel are not available the call should be directed to the On-Call Medical Director via EMS Communications on a recorded line.
4. If OLMC consultation is required the request should be via a physician at the intended receiving hospital (radio or recorded telephone line through EMS Communications). Please note that only physicians at receiving hospitals can provide medical direction; other staff, including nurses, may not provide online medical direction.
5. In the PCR, the name of the individual providing OLMC or administrative direction will be documented in the narrative section.

Cancellation or Alteration of Response

Standard:

Establish direction for cancelling or altering an initial response to a request for service.

Purpose:

To give the providers in the ATCEMS System guidance on when they may be able to alter or cancel an initial response based on patient or scene presentation.

Application:

1. Resources will be initially dispatched to a 9-1-1 request for service based on the currently approved Medical Priority Dispatch (MPD) standards.
2. After assessing the patient(s) and making a determination of needed resources any on-scene Credentialed Provider may modify or cancel the response mode of any other System Provider not already on-scene.
3. If cancelled, responders may, at their discretion, reduce their response to non lights and sirens ("Code 1") and continue to the scene in order to provide other assistance deemed appropriate by their organization or department. This does not apply to responses for responsibilities other than patient care (scene safety, fluids, etc).

Child Abuse (< 18 years old) Recognition and Reporting

Standard:

Assessment of an abused child is based upon the following principles:

- **Protect** the child from harm.
- **Suspect** that the child may be a victim of abuse, especially if the injury/illness is not consistent with the reported history.
- **Respect** the privacy of the child and family.
- **Collect** and document as much information as possible.

Purpose:

Children are at risk of abuse due to physical, sexual, emotional maltreatment or neglect. All are harmful to their physical and emotional development and all require intervention. Under the Child Abuse Prevention and Treatment Act (CAPTA), child abuse and neglect means, at a minimum, *"Any recent act, or failure to act, on the part of a parent or caretaker, which results in death, serious physical or emotional harm, sexual abuse, or exploitation, or an act or failure to act which presents an imminent risk of serious harm."* By Texas State law, all healthcare providers are obligated to report cases of suspected child abuse or neglect to either the local law enforcement agency **or** the Texas Department of Family and Protective Services (TDFPS) hotline 800-252-5400.

Application:

1. Stabilize and treat all injuries.
2. Immediately request law enforcement assistance.
3. Do not initiate a report to law enforcement or social services in front of the patient, parent, or caregiver.
4. If sexual abuse is suspected, discourage the patient from washing.
5. If patient, parent, or caregivers are hostile, or refuse access/transport protect your safety and immediately request law enforcement assistance if not already requested.
6. Do not confront or become hostile to the parent or caregiver.
7. Document:
   - In their own words (in quotation marks) all statements by the patient, the parent, or caregiver, including statements made about the manner of the injuries
   - Any abnormal behavior of the patient, parent, or caregiver
   - The condition of the environment and other residents present
   - Who received the report of suspected abuse or neglect
   - If reporting is done after PCR completion, an addendum should be written and attached with reporting date, time, who reported to, etc. This will serve to protect the Provider
8. Healthcare Providers are required to immediately report any suspicious findings to the Texas Department of Family and Protective Services (TDFPS) hot line 800-252-5400. This phone is answered 24 hours everyday. This should occur as soon as reasonably possible at the hospital after patient transfer is completed. Providers may need to request a **brief** "out of service time" for this process to be completed. Other than the phone interview, there are no other immediate written documentation reporting requirements by the State.
9. When the patient is transported the hospital; the RN/MD receiving report should be advised of the conditions/situation the patient was found in. Law Enforcement may also be notified if available. Notification of Law Enforcement does meet the "minimum requirement" of the State. However, notification of Hospital Staff only does not meet the State reporting requirements for abuse of people < 18 years old. For people ≥18 years old Refer to CS – 12.

System Performance Improvement

Standard:

In accordance with the Texas Health and Safety Code section 773 and Texas Medical Board requirements for EMS Medical Directors section 197; the System Performance Improvement program was established and implemented.

System response agencies (transport providers and FROs) and the Office of the Medical Director shall work together to continuously evaluate and improve behaviors, performance, and processes critical to maintaining a high standard of patient care and a high degree of patient safety. The performance improvement program requires active participation in each of the following performance improvement functions:

1. performance measures to drive safe and patient-centered behaviors,
2. preplanning and post-implementation evaluation to identify potential clinical improvements,
3. clinical errors & concerns to identify individual and systemic improvements, and
4. participation in external data registries and systems of care programs targeting clinical system improvements.

All organizations have agreed to participate in a system-wide performance improvement program including the execution of all necessary Memoranda of Understanding for the exchange of Health Insurance Portability and Accountability Act (HIPAA) protected information. All organizations further agreed to participate in the System error reporting guidelines included in the performance improvement program. Failure (Individually or Organizationally) to participate in the performance improvement program may result in suspension of credentials to practice and/or FRO Agreement.

Process management documents to administer this System Program are located at: www.atcomd.org

All process management documents may be modified as necessary for ongoing program improvement.

Crime Scene

Standard:

To establish guidelines for conducting patient related activities on a potential crime scene.

Purpose:

When all resuscitative efforts have ceased it is every Provider's responsibility to assist law enforcement by preserving evidence at potential crime scene. Any scene involving a patient that is pulseless and apneic is to be considered a crime scene and treated accordingly. In such situations Provider's should also maintain a heightened awareness for the presence of weapons.

Application:

General principles of crime scene management:

1. **The existence of a possible crime scene should not influence the decision to initiate resuscitative efforts.** The first arriving Credentialed Provider on-scene must make patient access to determine whether resuscitative efforts are indicated. If law enforcement prevents entry, additional responding units should be reduced to "Code 1" response. All law enforcement refusal of access to patients by Providers will be retrospectively reviewed with law enforcement.
2. A provider should not handle weapons unless necessary to ensure a safe patient care environment. If weapons must be handled, the Provider must wear gloves, clearly document the items original and new location, and inform on-scene Law Enforcement.
3. Never use anything (phones, sink, bathroom, towels, sheets, blankets, pillows, etc.) from an incident scene.
4. Victims of suspected assault should be strongly discouraged against "cleaning up," washing or showering prior to arrival of Law Enforcement or transport.
5. Providers should not touch anything in the crime scene unless required for patient care activities. Patient demographic information should be obtained from law enforcement when possible.
6. Any ligature(s) involved should be left as intact as possible and should be cut rather than untied. All cuts made should be in an area well away from any knots.
7. Containers of any substance, which may have been ingested by the patient/victim, should be left in the position found unless needed for ongoing patient care. If the container must be touched, use gloved hands and limit handling to a minimum in order to preserve any fingerprints that may be present.
8. Disposable items used during resuscitation efforts are to be left in place on the body. Sharps used during the resuscitation should be stored in an appropriate container and taken away by EMS personnel. Any extraneous trash should be taken away as well.
9. Intravenous/IO lines, airways and all other disposable equipment used, that are successfully placed, are to remain in place on the body.
10. Termination of Resuscitation (TOR) should be made in accordance with the standards outlined in the Criteria for Death or Withholding Resuscitation/Discontinuation of Resuscitation Standards.
11. If requested to do so by Law Enforcement; providers may cover a body with a trace evidence blanket (when available), clean sheet or sterile drape. All efforts should be made to protect the dignity of the patient and block the public view of the body.
12. Once a TOR time is obtained the body falls under the jurisdiction of the Medical Examiner. It may not be touched or altered in any way without authorization from the Medical Examiner's Office.
13. It is acceptable to share Patient Care information with appropriate on-scene law enforcement once the TOR has been completed.

Crime scene management where no resuscitation is initiated:

1. Any Responder, who is not credentialed to seek a TOR of an obvious Dead on Scene (DOS), should immediately leave the area via the path of entry without touching anything.
2. When TOR is required, only one properly Credentialed Provider should make entry to the area.

Crime scene management with unsuccessful resuscitation:

1. Once resuscitation efforts have ceased and a TOR has been obtained providers should immediately vacate the area.
2. The Medical Examiner must be able to differentiate between punctures originating from resuscitation efforts and those present prior to arrival. All unsuccessful IV/IO or pleural decompression attempts should be marked on the body by circling with a marker or pen.

Crime scene management with patient transport:

1. Clothing, jewelry or other objects removed from the patient should be left on-scene. Clearly document any items left and inform on-scene Law Enforcement of the items original and current locations.
2. When cutting clothing for the purpose of assessment and/or treatment avoid cutting through existing defects in the clothing (tears, entry or exit points) whenever possible.
3. If the patient has been placed on a sheet, notify the receiving facility that the sheet and all personal effects may be considered evidence.
4. If law enforcement is not on-scene prior to transport, the first response agency is to remain on scene, out of the crime scene perimeter, until arrival of law enforcement. An effort should be made to keep all individuals out of the area.

Crime scene management with "exigent" circumstances:

1. Code of Criminal Procedure Title 1 Chapter 49.25 Removal of Bodies Section 8: "*When any death under circumstances set out in Section 6 (below) shall have occurred, the body shall not be disturbed or removed from the position in which it is found by any person without authorization from the medical examiner or authorized deputy,* ***except*** *for the purpose of preserving such body from loss or destruction or maintaining the flow of traffic on a highway, railroad or airport.*"
2. In the case of these exceptions providers may be requested by law enforcement to assist with the movement/removal of the body. When possible evidence blankets should be used for patient movement and every effort should be made to preserve evidence where possible.

N.B. Section 6 Death Investigations: This section outlines the indications for inquest by the medical examiner. For more information visit http://www.statutes.legis.state.tx.us/Docs/CR/htm/CR.49.htm#49.25

Criteria for Death or Withholding Resuscitation

Standard:

Define the parameters in which providers in the ATCEMS System may withhold resuscitative efforts.

Purpose:

CPR and ALS treatment are to be withheld only if the patient is obviously dead per criteria below or has a valid DNR per Clinical Standard CS – 09 DNR/Advanced Directive. **If you are unsure whether the patient meets criteria, resuscitate.**

Application:

If resuscitation efforts have been initiated or continued by a system provider discontinuation is at the discretion of the paramedic provider.

Resuscitation efforts should not be initiated or continued by an ATCEMS System provider if one or more of the following is present. Document in the PCR the specific indications for withholding or stopping resuscitation.

1. Signs of obvious death:
   - Rigor mortis and/or dependent lividity;
   - Decomposition;
   - Decapitation;
   - Incineration;
2. Obviously mortal wounds (severe trauma with obvious signs of organ destruction)
3. Patient submersion greater than 20 minutes from arrival of first Public Safety entity until the patient is in a position for effective resuscitative efforts to begin
4. Fetal death with a fetus < 20 weeks by best age determination available at scene (considered products of conception and does not require time of death). Fetal death < 20 weeks may be documented on mothers PCR. If ≥ 20 weeks create separate PCR.

Definition of a Patient

Standard:

To establish guidelines for who meets the criteria to be considered a patient in the ATCEMS System.

Purpose:

The definition of a patient is any human being that:

- Has a complaint suggestive of potential illness or injury
- Requests evaluation for potential illness or injury
- Has obvious evidence of illness or injury
- Has experienced an acute event that could reasonably lead to illness or injury
- Is in a circumstance or situation that could reasonably lead to illness or injury

All individuals meeting any of the above criteria are considered "patients" in the ATCEMS System. These criteria are intended to be considered in the broadest sense. The determination of an individual's status as a patient requires the input of both the individual and the Provider as well as an assessment of the circumstances that led to the 9-1-1 call.

Application:

1. Anyone that fits the definition of a patient must be properly evaluated by a System credentialed provider and appropriate treatment and transportation offered. (If a patient wishes to refuse offered treatment and/or transport Against Medical Advice (AMA) refer to Refusal of Treatment or Transportation Standard and the Determination of Capacity Standard).
2. Any adult that does not fit the definition of a patient as defined above does not require an evaluation or, completion of a Patient Care Record and, may be designated as "no patient (s). Minors with an appropriate consenter on scene (defined in CS-27) or, who have the ability to consent as provided below may be designated as "no patient (s)". Minors, as defined below and **without** an appropriate "consenter on scene"; must have refusal documentation completed on a PCR/ePCR and, may not be designated as "no patient (s)." If there is any doubt; an individual should be deemed a patient and an appropriate evaluation should be provided and documented in the PCR/ePCR. If an individual meets the definition of a patient the following apply:
   - **The definition of an adult is a person who is 18 years of age or older**
     - Adults have the right to consent to or refuse medical treatment
   - **The definition of a minor is:**
     - A person under the age of 18 who is not and has never been married or who has not had the disabilities of minority (emancipation) removed for general purposes by a court
       - *Generally, minors can neither consent to, nor refuse, medical treatment. Some minors however, are considered to be emancipated and have the rights of consent/refusal afforded an adult*
     - A minor is considered emancipated if he or she has obtained a court order of emancipation from a Texas court. Minors may petition the court for emancipation if he is:
       - *(i)A resident of Texas;(ii) 17 years of age or at least 16 years of age and living separate from his parents, managing conservator or guardian;(iii) Is self-supporting and managing his own financial affairs*

- In certain situations, a minor may consent to medical treatment without involvement of a parent or legal guardian. A minor may consent to treatment if the minor:
    - Is on active duty with the US armed services;
    - Is 16 years or older residing separately from his parents or guardian and is managing his own financial affairs (regardless of the source of income);
    - Consents to diagnosis and treatment of any infectious/communicable disease with a reporting requirement;
    - Is unmarried and pregnant and consents to care related to the pregnancy, other than abortion;
    - Consents to examination and treatment relating to drug or alcohol dependency;
    - Is unmarried and has custody of their biological child, they may consent to treatment for the child

- **The protocol definition of a pediatric patient is:**
    - For the purpose of determining transport destination, any patient younger than 18 years of age unless expressly stated in another protocol, standard or procedure. (eg Trauma Transport Guidelines where it is defined as age <15 years)
    - For the purpose of selecting appropriate treatment protocol, any patient < 37 kg or who can be measured using a PEDIA Tape.

Discontinuation of Prehospital Resuscitation

Standard:

Unsuccessful cardiopulmonary resuscitation (CPR) and other advanced life support (ALS) interventions may be discontinued prior to transport when this standard is followed.

Purpose:

The purpose of this standard is to allow for discontinuation of prehospital resuscitation after the delivery of adequate and appropriate ALS therapy.

Application:

1. Any System Credentialed Provider, in the following circumstances, may discontinue resuscitation efforts without OLMC:
   - Resuscitation efforts were inappropriately initiated when criteria outlined in the Criteria for Death/Withholding Resuscitation Standard were present
   - A valid Out of Hospital Do Not Resuscitate Form (OOH-DNR) and/or OOH-DNR ID device was discovered after resuscitative efforts have been initiated. The form and device may be from any (US) State (Original or Copy) as defined in the DNR Standard
2. In addition to the previously stated criteria a Paramedic Credentialed Provider, in the following circumstances, may discontinue resuscitation efforts without OLMC:
   - If the patient suffers a traumatic injury meeting the following criteria:
     - The patient is pulseless and apneic on arrival of the first provider on scene **AND**
     - Lacks respiratory effort after basic airway maneuvers **AND**
     - Organized electrical activity on ECG with a rate (less than) < 40.
3. In the case of suspected medical cause of arrest all of the following criteria must be met:
   - Patient must be at least 18 years of age **or** the family of a minor is agreeable;
   - Cause of arrest is NOT due to suspected hypothermia;
   - Adequate CPR has been administered;
   - Airway has been successfully managed with verification of device placement. Acceptable management techniques include endotracheal intubation, blind insertion airway device (BIAD) or cricothyrotomy;
   - IV/IO access has been achieved;
   - Rhythm-appropriate medications and defibrillations have been administered according to protocol;
   - Persistent (>20 min) Asystole or agonal rhythm is present and no reversible causes are identified;
   - Failure to establish spontaneous circulation (palpable pulse) at any point in the arrest;
   - Failure to establish persistently recurring or refractory ventricular fibrillation/tachycardia or any continued neurological activity (eye opening, or motor response) after appropriate BLS and ALS resuscitation efforts over 20 minutes;
   - All Paramedic Credentialed providers on scene agree with decision to cease efforts.
   - If all of the above are not met and the provider feels it is appropriate to discontinue resuscitative efforts contact an on call System Medical Director.
4. When an on call System Medical Director is involved in the decision to terminate; resuscitative efforts must be continued while:
   - the family is counseled on the patients unchanging condition and impending discontinuation of efforts;
   - requesting a Termination of Resuscitation from an on call System Medical Director
5. If termination of efforts is anticipated Victim Services, when available, should be contacted as early as possible
6. Document all patient care and any interactions with the patient's family, personal physician, medical examiner, law enforcement, and medical control in the EMS patient care report (PCR)

DNR
Advanced Directives

Standard:

In the event any provider of the EMS System is presented with a completed Out of Hospital Do Not Resuscitate (OOH-DNR) form and/or OOH-DNR ID device, the provider shall withhold CPR and the listed therapies in the event of cardiac arrest. The form and device may be from any (US) State. Refer to DSHS Rule 157.25.

Purpose:

To honor the terminal wishes of the patient and to prevent the initiation of unwanted resuscitation.

Exceptions:

The provider shall begin resuscitation efforts until such time as a physician directs otherwise when:

- A patient that is known to be pregnant.
- If there are any indications of unnatural or suspicious circumstances.
- If the Provider is unsure of the existence or validity of the DNR.

Application:

1. An advanced directive does not imply that a patient refused supportive or palliative care.

2. When confronted with a cardiac arrest patient, the following conditions must be present in order to honor the DNR request and withhold CPR and ALS therapy:
   - Out-of-Hospital Do Not Resuscitate (OOH-DNR) – or – OOH-DNR ID device; (Original or Copy)
   - Valid Out-Of-Hospital Do Not Resuscitate Written Order (Original or Copy) or Device from any (US) State;
   - A licensed physician on scene or in contact by telephone orders that no resuscitation efforts are to take place

3. A DNR request may be overridden by:
   - The patient or person who executed the order destroying or directing someone in their presence to destroy the form and/or remove the identification device
   - The patient or person who executed the order telling the EMS Providers or attending physician that it is his/her intent to revoke the order
   - The attending physician or physician's designee, if present at the time of revocation, recording in the patient's medical record the time, date and place of the revocation and enters "VOID" on each page of the OOH-DNR

4. In the event there is a question regarding whether to honor or not honor an OOH-DNR or Advanced Directive, initiate resuscitation and contact an on call System Medical Director.

Documentation of Patient Care Report

Standard:

Establish the minimum documentation requirements for every patient contact.

Purpose:

To provide consistent and accurate documentation of the events of a patient encounter, the A/TCEMS System Medical Director is responsible for designating the minimum data required for patient care reporting. The following is the minimum requirements for documentation on all patient encounters.

Application:

- For every patient contact, the following documentation requirements apply and must:
  1. Be truthful, accurate, objective, pertinent, legible, and complete with appropriate spelling, abbreviations and grammar.
  2. Use only approved medical abbreviations refer to *"Approved Medical Abbreviations" (Appendix A-01).*
  3. Reflect the patient's chief complaint and a complete history or sequence of events that led to their current request or need for care.
  4. Contain a detailed assessment of the nature of the patient's complaints and the rationale for that assessment.
  5. Reflect the initial physical findings, a complete set of initial vital signs, all details of abnormal findings considered important to an accurate assessment and significant changes important to patient care. Reflect ongoing monitoring of abnormal findings.
  6. Summarize all assessments, interventions and the results of the interventions with appropriate detail so that the reader may fully understand and recreate the events.
  7. For drug administrations, include the drug name, drug concentration, volume or dosage administered, route, administration time, and response.
  8. List all treatments in chronological order. Response to treatments should also be listed
  9. For patients with extremity injury, note neurovascular status before and after immobilization. For patients with spinal immobilization, document motor function before/after spinal immobilization.
  10. For IV administration, document the catheter size, site, number of attempts, type of fluid, and flow rate.
  11. Include a lead II strip for all patients placed on the cardiac monitor. Any 12-leads should also be included. Any significant rhythm changes should be documented. For cardiac arrests, the initial strip, ending strip, pre and post defibrillation, pacing attempts, etc. should be attached. Or, electronically captured, uploaded and combined with the ePCR record.
  12. Document clearly any requested orders, whether approved or denied and MD name.
  13. Document any waste of narcotics including the quantity wasted, where wasted, and must have the name of the person who witnessed the waste.
  14. Include an explanation for why an indicated and appropriate assessment, intervention, or action prescribed by the Clinical Operating Guidelines did **NOT** occur.
  15. Be available in an acceptable time period after the patient encounter by leaving the ePCR short form at the hospital if transported.
  16. Remain confidential and be shared only with legally acceptable entities.
  17. Once the PCR is completed, original document will not be modified for any reason. Any changes required to correct a documentation error or for clarification shall be recorded in an addendum.

Documentation
Vital Signs

Standard:

Vital signs are an essential element of any patient evaluation. Complete sets of vital signs are to be documented for any patient who receives an assessment. Or, documentation should describe why they could not be obtained.

Purpose:

To insure that evaluation of every patient's volume, cardiovascular and mental status is documented with a complete set of vital signs.

Application:

1. Initial vital signs will be obtained manually with subsequent vital signs obtained mechanically as long as they correlate with the manual vital signs. If there is a discrepancy, manual vital signs should be continued. Initial vital signs may be deferred until transport in severe trauma when other treatments and packaging may take priority and vital signs may interfere with the timely execution of these priorities.
2. An initial complete set of vital signs includes:
   - Pulse rate
   - Systolic AND diastolic blood pressure
   - Respiratory rate
   - Pain / severity (pain scale used & score), how pain was treated and response to treatments with pain scale.
   - GCS
3. When no ILS or above treatment is provided, palpated blood pressures are acceptable for **REPEAT** vital signs.
4. Based on patient condition and complaint, vital signs may also include:
   - Pulse Oximetry (required for patients with a respiratory complaint or finding or treatment for such)
   - Temperature
   - End Tidal CO2
5. If the patient refuses this evaluation, document the refusal in the PCR in accordance with the Refusal of Treatment or Transportation Standard (CS – 27).
6. When any components of vital signs were obtained using the cardiac monitor, the data should be exported electronically to the patient care report. Where values are inconsistent with manually obtained values, values may be appropriately edited to reflect the manually obtained values. Documentation should reflect this as an edit.
7. The pulse rate should be obtained through palpation. A pulse oximeter heart rate is also acceptable.
8. Record the time vital signs were obtained.
9. Any abnormal vital sign should be repeated and monitored closely.
10. Vital signs should be obtained approximately every 10 minutes. The provider should change the frequency as need to appropriately care for the patient. **At a minimum, a set of vital signs is obtained initially and just prior to disposition.**
11. An initial set of vital signs is obtained once the patient can be accessed and the patient consents to assessment.
12. A set of vital signs is obtained just prior to completing the patient's final disposition (e.g. obtaining a refusal of transport, arrival at the ED, handing off the patient to hospital staff other than ED).

OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

Domestic Violence (≥ 18 years old) (Partner and/or Elder Abuse) Recognition and Reporting

Standard:

Domestic violence is physical, sexual, or psychological abuse and/or intimidation, which attempts to control another person in a current or former family, dating, or household relationship. Elder abuse is the physical and/or mental injury, sexual abuse, negligent treatment, or maltreatment of a senior citizen by another person. Abuse may be at the hand of a caregiver, spouse, neighbor, or adult child of the patient. The recognition, appropriate reporting, and referral of abuse is a critical step to improving patient safety , providing quality health care, and preventing further abuse. For people < 18 years old Refer to CS – 03.

Purpose:

Assessment of an abuse case is based upon the following principles:

- **Protect** the patient from harm.
- **Suspect** that the patient may be a victim of abuse, especially if the injury/illness is not consistent with the reported history.
- **Respect** the privacy of the patient and family.
- **Collect** and document as much information as possible.

Application:

1. Assess all patients for any psychological characteristics of abuse, including excessive passivity, compliant or fearful behavior, excessive aggression, violent tendencies, excessive crying, behavioral disorders, substance abuse, medical non-compliance, or repeated EMS requests. This is typically best done in private with the patient.
2. Assess all patients for any physical signs of abuse, especially any injuries that are inconsistent with the reported mechanism of injury. Defensive injuries (e.g. to forearms), and injuries during pregnancy are also suggestive of abuse. Injuries in different stages of healing may indicate repeated episodes of violence.
3. Assess all patients for signs and symptoms of neglect, including inappropriate level of clothing for weather, inadequate hygiene, absence of attentive caregiver(s), or physical signs of malnutrition.
4. System Credentialed Providers are required to immediately report any suspicious findings to the Texas Department of Family and Protective Services (DFPS) hot line 800-252-5400. This phone is answered 24 hours everyday. This should occur as soon as reasonably possible after leaving the scene (if patient refuses) or at the hospital after patient transfer is completed. Providers may need to request a **brief** "out of service time" for this process to be completed. Other than the phone interview, there are no other immediate written documentation reporting requirements by the State.
5. If the patient is transported the hospital; the RN/MD receiving report should be advised of the conditions/situation the patient was found in. Law Enforcement may also be notified if available. These must be reported to the "Department" (DFPS). Reporting options are additionally discussed including criterion for on-line reporting vs. hotline call; including, creating an account and login to make the on-line report : https://www.txabusehotline.org/Login/Default.aspx
6. All patient encounters with DFPS reporting must be documented in your PCR/ePCR with the DFPS intake/case number included.

Reference: Human Resources Code Title 2, Subtitle D, Chapter 48, Sec. 48.002 and 48.051.

Emergency Medical Dispatch

Standard:

- This standard establishes a uniform level of response for the EMS System and provide for the safest and most appropriate level of response to the patient(s)

Purpose:

- EMS Units and First Responders will be dispatched in accordance to the standards developed by the Medical Director and the Medical Priority Dispatch (MPD) Protocols
- EMS Units and First Responders will respond Code 1 or Code 3 in accordance to MPD standards. As more information from EMS Communications or on scene medical responders becomes available, the response may be upgraded to Code 3 or downgraded to Code 1

Application:

1. EMS Units and First Responders dispatched for Code 1 response, will not upgrade to a Code 3 response unless:
   - The EMS Communications personnel determine that the patient's condition has changed and upgrades the incident to a Code 3 response
   - Public Safety personnel on-scene requests a Code 3 response
2. EMS Units and First Responders may be diverted from a lower priority incident (e.g., Priority 3, 4 or 5) to a higher priority incident (e.g., Priority 1 or 2) based on MPD Protocol, if the diversion provides a significant time savings.
3. The EMS unit or First Responder may divert their response if they come upon what appears to be a higher priority incident (e.g., en route to a Priority 3, 4 or 5 incident and comes upon an MVC with high potential for patients in need of trauma activation).
4. EMS Units and First Responders may by-pass what appears to be a lower priority incident and continue to the originally assigned incident. EMS Communications should be notified so that another EMS resource may be assigned to the lower priority incident.

BLS Transport Decision Process

Purpose: To define patients that cannot be transferred to a provider other than a Credentialed Paramedic.

Application:

For the purposes of this standard, "Paramedic" refers to an Austin/Travis County EMS System Credentialed Paramedic with no current restrictions on their credential to practice.

All providers on scene are expected to participate in patient care. Both providers are responsible for conducting an initial evaluation to determine a chief complaint, level of distress and initial treatment plan. Stable patients not in need of paramedic level care may be attended by another provider. The Transport Paramedic is responsible for making the decision for which patients can be safely transported by a provider with lower credentials.

The care of the following patients **cannot** be transferred to a lower level of Credential by a Transport Paramedic:

1. Any patient who requires additional or ongoing medications, intervention and/or monitoring beyond the scope of practice of the System Credentialed EMT - B provider refer to OMD Reference OMDR – 03.
2. Any patient that receives medications beyond the scope of practice of the System Credentialed EMT-B provider.
3. Postictal seizure patients who have not returned to baseline mental status.
4. Any patient with the following: Trauma Activation (steps 1 and/or 2), Stroke Alert, STEMI Alert, or Syncope.
5. Any patient for which the transporting providers **do not agree** can be safely transported without a Paramedic attending in the back of the ambulance.
6. Any "High Risk Refusal" as defined by Clinical Reference CR – 29.

Exceptions to the above listed items:

- Patients who received a **single dose** of intranasal (IN) narcotic for the purpose of pain control in a traumatic injury **not involving** the head, chest, or abdomen.
- Patients having a Syncopal episode, who are < 50 yrs. old, have a normal blood sugar, and a normal ECG.
- Monitor IV Saline Lock.
- Monitor PO route medications administered by a Medic II.
- Any hypoglycemic patient that returns to baseline mental status after treatment
- A BLS Transport Provider may call and obtain a Termination of Resuscitation (TOR) time on behalf of a Paramedic Transport Provider post ALS patient assessment and upon request.
- Refer to OMDR-3 for additional Scope of Practice.

BLS Transport Decision Process

The ePCR should reflect the decision making process to determine which provider attends in the back of the ambulance. As with all documentation, both providers are responsible for the content of the ePCR.

Hospital Diversion

Standard:

This standard establishes the conditions under which a System hospital may go on diversion and the process by which this should be implemented and discontinued.

Purpose:

- The ATCEMS System, with few exceptions, employs a no diversion policy for the transport destination of EMS patients
- This standard was developed in cooperation with the hospital networks, the medical community and the Travis County Medical Society ED/EMS committee

Application:

1. All hospitals are to remain open to EMS patients at all times except in the conditions described herein or in extraordinary circumstances with approval of the Medical Director.
2. Black-Internal Disaster:
   - If a hospital with a specialized designation such as a "Stroke Center" experiences failure of critical equipment needed to meet that requirement (i.e., CT Scanner) they may close to EMS transports for that particular patient category
   - If a hospital experiences an "Internal Disaster" such as Fire, Utility Failure or other significant infrastructure failure they may close to EMS transports(and all other services)
   - Hospitals which need to close due to Internal Disaster as described above will contact ATCEMS Emergency Communications Supervisor at 512-978-0410. They will advise the supervisor of the Internal Disaster and/or the critical equipment failure that has led to the closure
3. Black-Trauma Priority:
   - Brackenridge Hospital, utilizing their internal process to assess their trauma capacity, may close to Charlie, Delta, and Echo category medical patients
   - This does not include any patients meeting Trauma Activation criteria or any Bravo or Alpha category medical patients
   - This diversion status is limited to two hours and expires automatically unless an extension is requested
   - The Brackenridge charge nurse or their designee should contact the ATCEMS Emergency Communications Supervisor as indicated above. The Communications Supervisor should confirm the name and title of the person making the request. The hospitals compliance with their internal process is assumed and does not require validation or confirmation by the Communications Supervisor
4. Any attempt to divert patients due to reasons other than those listed above should result in notification of the on-call Division Commander and the on-call Medical Director.
5. In each case listed above Transport units, Commanders, Medical Director(s) and other individuals will be notified of the change in hospital status via AWACS page to the "EMS-Hospital Closure" group indicating that Hospital XX has an Internal Disaster and/or Trauma Priority and is diverting the corresponding EMS traffic until further notice. The page will indicate the affected hospital, the reason for the diversion (Internal Disaster/Trauma Priority) and that the facility is on diversion until further notice.
6. The patient should be informed of the need and reason the hospital is diverting EMS patients and; in the absence of a time critical or unstable patient condition the EMS provider(s) should recommend that a patient be transported to another network hospital where possible. When a time critical or unstable patient condition exists the closest appropriate facility should be recommended that is not on diversion.

If the patient refuses the recommended destination the EMS unit should transport the patient to a facility (not on diversion) of their choosing.

7. If a patient insists on being transported to a facility on diversion providers should explain the reason for the diversion status and that transport to that facility may result in significant delays in their care, worsening of their condition or even death. Providers should attempt to convince the patient of the need to go to an alternate facility. This includes, but is not limited to, contacting a supervisor or on line medical control at the diversion facility. If a patient insists on transport to that facility and the only alternative is refusal of transport the EMS provider(s) should have the patient sign a refusal acknowledging the explained risks of transport to that facility and transport the patient to their destination of choice. If that hospital is unable to care for the patient due to a lack of equipment or expertise (e.g. STEMI to non-PCI facility, Stroke to facility without CT capabilities, etc) the EMS providers should advise their Supervisor of the situation and upon arrival at the destination remain immediately available for transfer of the patient. The length of this availability is to be determined in consultation with the EMS Supervisor. The provider should thoroughly document their description of the risks and their efforts to convince the patient to go elsewhere.
8. If a hospital has closed to <u>all</u> patient traffic including walk-ins due to catastrophic loss of capabilities or potential threat to the safety of both providers and patients the hospital is no longer considered an approved receiving hospital until the condition is removed. Patients should be informed that the hospital is closed and that they will be denied access to the facility. The patient should be transported to another appropriate facility in accordance with #6 above. If a patient still wishes to refuse transport they should be informed of the risks and a refusal obtained in accordance with the Refusal of Treatment/Transportation Standard.
9. If an EMS Supervisor encounters a condition/situation at a hospital that may place providers at risk (i.e. riot, gang violence, hostage situation etc.) the Supervisor may close the hospital to EMS traffic pending resolution. The Supervisor should contact communications to advise all transport providers of the hazardous condition. Communications should immediately notify the on call Medical Director and Division Chief.

Identification Badges

Standard:

Credential Badges are the property of the Office of the Medical Director and are valid only if they are issued and maintained as designated by Clinical Standard (s) and as such, badges will not be modified. It is the responsibility of System Provider Organizations to immediately collect and return to the OMD the badges of those individuals whose credentials have been revoked, or who are no longer affiliated with the organization.

Purpose:

Due to the variety of providers with different levels of training an ID badge system is required to ensure that everyone on scene knows the System-credential capabilities of each Provider.

Application:

1. Proper identification of System Providers is required by the Texas Department of State Health Services (TDSHS).
2. System identification badges serve as the primary identifier for System Credentialed individuals as well as his/her Credential level.
3. These badges are not intended for use as organization or department identification.
4. Proper identification of Providers will facilitate the exchange of patient information within the guidelines established by Health Insurance Portability and Accountability Act (HIPAA).
5. Badges should be visibly worn by any responder providing any level of patient care. The exception would be when circumstances require the responder to utilize personal protective outerwear (i.e. bunker gear, rain gear, etc.).
6. Badges are valid throughout the System and are not limited to specific venues or defined response areas.
7. The ATCOMD ID badges include:
   - Provider's Picture
   - Name
   - Credential Level
   - TDSHS Certification or Licensure Level
   - TDSHS Certification or Licensure number
   - Color coding denoting the appropriate credential level
8. Below is the color coding used to aid in identifying System Credential Level:

White	Responder with no System Medical Credentials
Yellow	System Responder
Blue	EMT-Basic
Green	EMT-I
Red	Paramedic
Purple	Physician

Candidates that are transitioning to a higher credential level will wear the color badge for the desired level of credential with the words "CANDIDATE" within the color coding and above the OMD LOGO

9. A system responder that is currently system credentialed, but without a badge is, at that point, functioning as a First Aid Provider. In cases where an individual is recognized and known to be a currently credentialed provider in the System, the provider in charge of patient care may, at their discretion, allow the individual to participate in patient care. The lead transport medic and the provider in question are responsible for assuring badge compliance, but all Providers on scene are charged with pointing out any on-scene discrepancies.

10. A Provider who provides care they are not credentialed to perform is functioning outside the scope of his/her practice. The Provider performing the procedure in question and the provider in charge of the scene should both immediately report the occurrence using your Organization's defined Clinical Error Reporting Process. *Failure to do so may be considered an integrity violation and may result in action against the providers credential and/or State Certification/License.* This does not apply to candidates or students in an approved training program operating under appropriate supervision.

Infant Abandonment

Standard:

Texas law provides a responsible alternative to mothers who might otherwise abandon or harm a newborn child. It states that a parent may leave an unharmed infant, up to 60 days old, at any hospital, fire station or EMS station with "no questions asked."

> *Sec.262.302 of the Texas Family Code, states…(a) A designated emergency infant care provider shall, without a court order, take possession of a child who appears to be 60 days old or younger if the child is voluntarily delivered to the provider by the child's parent and the parent did not express an intent to return for the child. (b) A designated emergency infant care provider who takes possession of a child under this section has no legal duty to detain or pursue the parent and may not do so unless the child appears to have been abused or neglected. The designated emergency infant care provider has no legal duty to ascertain the parent's identity and the parent may remain anonymous. However, the parent may be given a form for voluntary disclosure of the child's medical facts and history. (c) A designated emergency infant care provider who takes possession of a child under this section shall perform any act necessary to protect the physical health or safety of the child. The designated emergency infant care provider is not liable for damages related to the provider's taking possession of, examining, or treating the child, except for damages related to the provider's negligence.*

Purpose:

To provide:

- Protection to infants that are placed into the custody of an EMS provider under this law.
- Protection to EMS systems and personnel when confronted with this issue.

Application:

1. Initiate patient assessment/care with appropriate Protocol (s) as needed.
2. If the event occurs at a (AFD or ESD) Fire Station, immediately contact EMS Communications for assistance.
3. Advise Supervisor of event.
4. Transport to an appropriate medical facility.
5. Communications should notify Department of Social Services of the event and transport destination.
6. An infant/child's age that is known or estimated at over 60 days old or, has been abused or neglected; must also include early notification of Law Enforcement.
7. Documentation of the event and any medical information provided for the infant/child by the parent must be included in the PCR/ePCR.

Inter-facility Transfers

Standard:

Establish a process for guidance on Emergent inter-facility transfers (ETRAN).

Purpose:

To transport a patient who requires Advanced Life Support care during their transport from one medical facility to another.

Application:

1. The transporting paramedic should ensure that all appropriate documentation accompanies the patient. Known STEMI or time dependent Stroke or Trauma patients are exceptions to this rule. An MOT must be obtained (location/facility exceptions noted in CS – 19) but all other records may be faxed to the receiving facility if not presented at time of transfer.
2. In the event a Transport Provider arrives at the transferring facility and; the patient is on a pump, vent, receiving medication (s) not in the System COGs, or on a medical device not used in the System; the Transport Provider **must** contact the on call System Medical Director.
3. When transporting hospital staff, both the transport crew and accompanying staff are responsible for management of the patient.
4. All EMS rendered treatments must comply with the A/TCEMS System Clinical Operating Guidelines.
5. An A/TCEMS patient care record will be completed in accordance with the Documentation of the Patient Care Report Standard (CS – 10).
6. The following items are required equipment for all transfers.
   - Cardiac monitor/defibrillator
   - Combo kit with oxygen
   - Obstetrics kit (OB/GYN transfers only)
7. All patients that fall within the intent of this Standard should, at a minimum receive:
   - Continuous ECG and oxygen saturation monitoring
   - Non-invasive hemodynamic monitoring (auscultated blood pressure, palpated pulse rate)
8. If the patient deteriorates, the transferring facility should be notified via radio or cellular phone. Additional orders if needed should be obtained from the receiving physician or facility whenever possible.

Memorandum of Transfer (MOT)

Standard:

To establish the expectations that ATCEMS transporting crews will review the Memorandum of Transfers (MOT) in order to transfer the patient to the appropriate receiving facility as ordered in the MOT.

Purpose:

A Memorandum of Transfer (MOT) is a medical order written for the transfer of care of a patient between one hospital to another hospital. The transport providers will honor the MOT unless there is a change in patient condition that necessitates transport to a closer facility for the purpose of stabilization.

Application:

1. Ensure that there is an MOT for every patient that is being transferred from one hospital to another that it includes the signature of the sending physician, the name of a receiving physician and a destination that is an approved transport destination as outlined in the COG's. If the transport providers perceive a conflict with the existing ATCEMS destination policy and the indicated destination this must be clarified with the sending physician or his designee before transport is initiated.
2. Review the MOT to ensure the intended destination is listed on the MOT. If it is not indicated or there is a change in destination this must be modified by the sending facility prior to transport. The transport providers shall not modify or document on the MOT.
3. The patient is to be transported to the intended destination unless there is a change in the patient status that can not be managed through existing ATCEMS treatment protocols or through contact with the sending/receiving physician. In such cases the provider may divert to a closer appropriate facility for immediate stabilization. The reasons for diversion should be thoroughly documented in the PCR.
4. Treat the patient in accordance with the COG's or medical orders provided by the transferring physician. Providers must ensure that the orders from the transferring physician are within their defined scope of practice according to the COG's.
5. A patient with present mental capacity who has not had this capacity removed by physician or court order and who is not in custody retains the rights of consent and refusal outlined in the Refusal of Treatment/Transport Standard. If the patient wishes to refuse care or alter the prescribed destination this should be discussed with the sending physician.

Location/Facility exceptions to MOT Requirement:

- **Transfers from St David's Bee Cave (FSED) to St David's South Austin Medical Center**
- **Transfers from St David's Pflugerville (FSED) to St David's North Austin Medical Center**
- **Transfers from St David's Cedar Park (FSED) to St David's Round Rock Medical Center**
- **Private Physicians Offices**
- **Urgent Care Facilities**

Minimal Equipment Patient Side

Standard:

To establish a minimum list of equipment that will be taken to the patient's side on every call.

Purpose:

ATCEMS System providers are often faced with patient conditions that require immediate intervention in order to decrease morbidity or prevent mortality. Time dependent interventions are those that must be performed immediately or within seconds/minutes to be effective.

Application:

ATCEMS System providers will ensure that the following equipment will be immediately available for use at the patient's side:

Required System Responder and EMT-B Equipment:	
Appropriate PPE***	Stethoscope
Defibrillator (AED or Manual)	B/P cuffs
BVM with appropriate masks	Suction
O2 + delivery devices (incl. CPAP)	OPA / NPA
ITD	King LT airway **(EMT-B only)**
Epi Pen (Adult) **(EMT-B only)**	Albuterol with nebulizer kit **(EMT-B only)**
Glucometer & test strips	Oral glucose
Tape	4X4
Kerlix	
Required ILS & ALS Equipment (In addition to equipment listed above):	
Saline lock equipment	Epi 1:1000 and IM supplies**(Paramedic)**
D10W in 250mL S/W for Infusion	Mucosal Atomization Device
Surgical Cricothyrotomy kit **(Paramedic)**	Needles for thoracostomy **(Paramedic)**
Laryngoscope & blades for FBAO	Magill forceps for FBAO
Naloxone (IN, IM, IV)	

The above interventions are most commonly associated with the following clinical conditions:

- Obstructed or compromised airway
- Ineffective ventilation
- Ineffective circulation
- Removal from impending, active or ongoing physical harm

****Be observant for of the level of Disease Isolation Precautions in effect, if any, for the patient situation. Should there be no immediate need for equipment to intervene to decrease morbidity or prevent mortality, stage the equipment outside the potentially contaminated environment for immediate access if the patient condition changes.*

On-scene Authority
Patient Care

Standard:

Establish the clinical hierarchy of authority for on-scene patient care.

Purpose:

Credentialed Providers within the ATCEMS System are responsible for providing patient care in accordance with the prescribed protocols, standards and procedures. However there may be times when providers disagree about the care being delivered. Patient safety is the responsibility of every provider and any concerns should be immediately brought to the attention of other caregivers at the scene. In ANY disagreement regarding circumstances relating to patient care a professional demeanor and focus on the best interest of the patient is paramount. In order to maintain an orderly scene and allow rapid resolution of conflict a hierarchy of clinical responsibility must be established.

Application:

1. In the event of conflicting approaches to providing patient care, extraction, or transport, it is the responsibility of the on-scene Credentialed Providers to reach consensus as to the most appropriate care for the patient(s). In the event of unresolved conflict, the Senior Credentialed Provider on-scene has final authority and responsibility for decisions regarding patient care. If there is a conflict involving a supervised provider (Cadet/Student/Candidate) the assigned training officer has authority (at their level of Credential) and should be consulted.
2. Seniority of Credentials (in descending order) is:
   - EMS System Medical Director or designee
   - On-Line Medical Consultation Physician
   - On-scene Physician (In accordance with Physician on Scene Standard CS-23)
   - Clinical Specialist Paramedic on Transporting Unit
   - Paramedic Transporting Unit
   - Paramedic First Responder
   - Emergency Medical Technician — Intermediate
   - Emergency Medical Technician — Basic Transporting Unit
   - Emergency Medical Technician — Basic
   - System Responder
   - Administrative Provider (any level)
3. All significant or unresolved conflicts regarding on-scene management of patients should be reported via the appropriate chain of command and will be retrospectively reviewed in accordance to each organization's Event Review Process (OMDR – 06).
4. If any provider, regardless of credential, feels the conflict negatively impacted patient care the incident should be reported to the Office of the Medical Director as soon as practical without causing an additional impediment to care.

Patients with Special Healthcare Needs

Standard:

This standard is established to provide quality patient care and EMS services to patients with special health care needs. It is also important for the EMS providers to understand the need to communicate with the patients, family and caregivers regarding health care needs and devices that EMS may not have experience with.

Purpose

Medical technology, changes in the health care industry, and increased home health capabilities have created a special population of patients that interface with the EMS system. It is important for EMS to understand and provide quality care to patients with special health care needs.

Application:

1. Emergencies involving special needs patients may involve equipment (e.g. LVAD or vagus nerve stimulation device, etc.) that is unfamiliar to the provider. To familiarize themselves with the equipment providers may:
    - ask the family, caregiver or patient for any documentation or specific information regarding the condition and/or device;
    - utilize Just in Time Training aides/information regarding devices where available;
    - contact the patient's primary care physician or OLMC for assistance with specific conditions or devices or for advice regarding appropriate treatment and/or transport specific to the patients condition.
2. Transportation will be to the hospital appropriate for the specific condition of the patient. In some cases this may involve bypassing the closest facility for a more distant yet more medically appropriate destination.

Physician on Scene

Standard:

The medical direction of prehospital care at the scene of an emergency is the responsibility of those most appropriately trained in providing such care. All care should be provided within the rules and regulations of the Texas Medical Board of the State of Texas.

Purpose:

This standard is established to identify a chain of command for System providers when dealing with physicians on scene and to assure the patient receives the maximum benefit of appropriate physician resources.

Application:

The TMB has specific rules pertaining to the authority of a physician to order specific patient care interventions on the scene of a medical call. There are two different types of situations regarding on-scene physicians. One is when the patient's own physician is on-scene ("**Patient's Personal Physician**"). The other is when a physician that does not have an established relationship with the patient is on-scene ("**Intervener Physician**").

1. **Physician On-Scene/General Guidelines:**
   - The Credentialed Provider on-scene is responsible for management of the patient(s) and acts as the agent of the Medical Director or OLMC
   - In order to participate in care, the patient's personal physician or intervener must present a valid Texas Medical Board License (all physicians are issued a wallet card) or be recognized as a physician by the Provider
2. **Patient's Personal Physician On-Scene:**
   - If the patient's personal physician is present and assumes care, the Credentialed Provider should defer to the orders of the patient's personal physician if the directed practice is within the scope and training of the credentialed provider
   - The patient's personal physician must document his or her interventions and/or orders on the EMS Patient Care Record
   - OLMC should be notified of the participation of the patient's personal physician either from the scene or on arrival at the emergency department
     - *If there is a disagreement between the patient's personal physician and the System COGs, the physician shall be placed in direct communication with OLMC at the receiving facility. If the patient's personal physician and the on-line physician disagree on treatment, the patient's personal physician must either continue to provide direct patient care and accompany the patient to the hospital, or must defer all remaining care to the on-line physician*
3. **Intervener Physician On-Scene:**
   - If an intervener physician is present at the scene, has been satisfactorily identified as a licensed physician and has expressed willingness to assume responsibility for care of the patient, OLMC should be contacted. The on-line physician has the option to:
     - manage the case exclusively
     - work with the intervener physician
     - allow the intervener physician to assume complete responsibility for the patient
       - *If there is a disagreement between the intervener physician and OLMC, the Provider will take direction from the on-line physician and place the intervener physician in contact with the on-line physician*
   - The intervener physician must document his or her interventions and/or orders on the EMS Patient Care Record

- The decision of the intervener physician not to accompany the patient to the hospital shall be made with the approval of the on-line physician
- Medical orders are not accepted from any non-physician health care providers unless specifically approved by OLMC

Office of the Medical Director
Credential Audit

Standard:

To establish a standardized process for the Office of the Medical Director (OMD) to conduct an audit (s) of all registered Credentialed Providers.

Purpose:

The purpose of the audit is to accurately maintain the official Credentialing database of all providers for System Medical Direction. All Organizations are required to report additions and separations of any Credentialed Provider (s) to the OMD as soon as they occur.

Application:

1. The OMD will periodically audit the System for currently credentialed providers by producing rosters developed from the Records Management System (RMS) data base.
2. Each Organization receiving one of these is required to review and report any discrepancies to the OMD.
3. The Organization and the OMD will work together to resolve any roster discrepancy.
4. The OMD may provide rosters to individual Organizations or, all System Organizations as needed.
5. The OMD may audit the System on an as needed basis.
6. The OMD may include additional required information in conjunction with an audit including, but not limited to, confirmation (s) of education and/or skill competency compliance.

Provider Credentialing

Standard:

Define credentialing and the credential levels of providers within the ATCEMS System.

Definitions:

Certification or Licensure: an individual who is certified or licensed by a regulatory body as minimally proficient to perform emergency prehospital care at a particular level that is defined by a regulatory body (e.g., ECA, EMT-B, EMT-I, EMT-P or LP).

Credential to Practice: a process that is defined by the Medical Director that requires a certified or licensed individual to demonstrate competency to practice at a specified level of prehospital care. The credential to practice may be at or below the individual's level of certification or license.

Purpose:

Every Provider that delivers medical care within the ATCEMS System must be "Credentialed to Practice" in addition to holding a current State of Texas Certification or Licensure. All Credentialed Providers within the ATCEMS System are allowed to provide care under the delegated authority of the Medical Director in accordance with the rules of the Texas Department of State Health Services and the Texas Medical Board. Credentialing is the final approval by the System Medical Director that ensures an individual's competency to care for patients as part of the Emergency Medical Services System. An individual is "Credentialed to Practice" when he or she successfully meets and maintains the defined Credentialing requirements. The levels of Credentialing are:

- Administrative Provider
- Emergency Medical Dispatch (EMD)
- System Responder
- Emergency Medical Technician - Basic (EMT-B)
- Emergency Medical Technician - Intermediate (EMT-I)
- Emergency Medical Technician - Paramedic (EMT-P)

Credentialing Requirements (OMDR – 09) defines what is required to obtain and maintain credentials to practice within the ATCEMS System and can be found at www.atcomd.org

Authorized Skills by Credential Level (OMDR – 3) defines the interventions available to credentialed providers and can be found at www.atcomd.org

"System Clinical Reintegration" is necessary for a Responder or Provider that has been absent from direct patient care for an extended period of time as defined in OMDR – 20 www.atcomd.org During the time of absence, the responder/provider Credential will be placed on an **"OMD Administrative Hold"** (CS – 29). Examples of absences that this process applies to are: leave of absence, OJI, FMLA, Departmental/Organizational reassignments, military deployments or similar. Each organization is responsible for notifying the OMD of these type circumstances as soon as they are aware of them. The purpose of this process is to ensure that the System Credentialed responder/provider has a smooth transition back into patient care. Upon their return, a time of review, competency assessments and/or preception during direct patient care insures clinical knowledge and skills are commensurate with System expectations. The exact steps and competencies required will be determined based upon the circumstance of the absence, length of time away and meeting all DSHS requirements. Each Organization will advise the OMD of the need for this process and; propose an individualized plan for each person involved in it. The OMD will review the proposal and provide approval and/or feedback for each plan.

Provider Qualifications

Standard:

Define qualifications in specialty areas that may include additional training or maintenance requirements.

Purpose:

Establish qualifications for ATCEMS System providers with specialized training, protocols or skills. These provider qualifications may have minimum credential levels, competencies, and/or other requirements which must be completed or maintained in addition to any requirements associated with a provider's System Credential. Qualifications are created and granted by the Medical Director independent of System Credentials and may be awarded, suspended or, revoked independent of or in conjunction with any action against a providers credentials. Below are the current qualifications approved by the Office of the Medical Director. Qualifications may be added or removed by the Medical director based on the needs of the EMS System.

- **System Educator (SED)**
- **Performance Management/Improvement Officer (PMI)**
- **System Credentialing Preceptor (SCP)**
- **Community Resource Paramedic Provider (CPP)**
- **Special Operations – Tactical Medic (TAC)**
- **Special Operations – Rescue (SOR)**
- **Immunization (IMM)**
- **Transport Provider (TSP)**
- **Phlebotomy Services Provider (PSP)**

For a list of requirements for each of the qualifications (OMDR – 02) see the OMD Website at: www.atcomd.org

Refusal of Treatment and/or Transport

Standard:

To establish guidelines for Providers when addressing issues of consent or for patients who wish to refuse the treatment and/or transportation offered.

Purpose:

Adult patients with present mental capacity retain the right to refuse care and/or transport against medical advice.

Definitions:

Informed Consent/Refusal

In Texas the general rule of law is that before a person may receive medical treatment they must give informed consent for that treatment. Without consent the medical treatment is unlawful. This is true regardless of whether the person receiving the treatment is a minor or has reached the age of majority (18 years of age).

Informed consent is based on an individual's appreciation and understanding of the facts, implications and future consequences of an action. In order to provide informed consent or refusal a patient must have adequate reasoning faculties(capacity) and be provided with information (risks/benefits) relevant to the decision making process. They should also be aware of the options available to them if they choose not to accept evaluation and/or treatment.

Implied Consent

In potentially life-threatening emergency situations where a patient is unable to give informed consent the law presumes that the patient would give consent if able. In potentially life-threatening emergency situations, consent for emergency care is implied if the individual is:

- Unable to communicate because of an injury, accident, illness, or unconsciousness and suffering from what reasonably appears to be a life-threatening injury or illness

  OR
- Suffering from impaired present mental capacity

  OR

  A minor who is suffering from what reasonably appears to be a life-threatening injury or illness and whose parents, managing or possessory conservator, or guardian is not present

Substituted (Surrogate) Consent

An individual with legal standing may give consent for a patient when the patient does not have the ability to do so because they are a minor, incarcerated or have been determined by courts to be legally incompetent. Parents or guardians are entitled to provide permission because they have the legal responsibility, and in the absence of abuse or neglect, are assumed to act in the best interests of the child.

Refusal of Treatment and/or Transport

The following person(s) may consent to, or refuse, the evaluation, treatment, and/or transportation of a minor:

- Parent
- Grandparent
- Adult (> 18) sibling
- Adult (> 18) aunt or uncle
- Educational institution in which the child is enrolled that has received written authorization to consent/refuse from a person having the right to consent/refuse.
- Adult who has actual care, control, and possession of the child **and** has written authorization to consent/refuse from a person with the power to consent /refuse (i.e., daycare camps, soccer moms, carpools, etc.)
- Adult who has actual care, control, and possession of a child under the jurisdiction of a juvenile court
- A court having jurisdiction over a lawsuit affecting the parent-child relationship of which the child is the subject
- A peace officer who has lawfully taken custody of minor, if the peace officer has reasonable grounds to believe the minor is in need of immediate medical treatment.
- A managing or possessory conservator or guardian.

Application:

1. All patients refusing treatment and/or transport must :
   - Be at least 18 years of age or an Emancipated Minor;
   - Be able to demonstrate present mental capacity in accordance with the Determination of Capacity Procedure: Clinical Procedure CP - 23.
   - NOT have been declared legally incompetent by a court of law. (If a patient has been declared legally incompetent, his/her court appointed guardian has the right to consent to, or refuse, evaluation, treatment, and/or transportation for the patient.)
   - NOT be suicidal or homicidal. (A law enforcement officer may arrest a patient who threatens or attempts suicide under Texas Health and Safety Code Section 573.001. The statute also covers other mentally ill patients and a similar statute allows an arrest for chemical dependency. Only a law enforcement officer can make these arrests.)
2. Patients meeting the above criteria who demonstrate present mental capacity retain the right to refuse any or all treatment and/or transportation. All patients should be encouraged to seek care. Additional resources may be employed including but not limited to involving the patients physician, additional providers such as a Commander, DMO, or On-line Medical Control.
3. Under no circumstances will ATCEMS System providers refuse or deny treatment or EMS transportation to any patient (or legal patient representative) who requests medical assistance from the provider or agency. The initiation of treatment should not be dependent on the patient's willingness to accept transport. (e.g. Hypoglycemia, Asthma, etc.) This does <u>not</u> include the administration of narcotic pain medications or sedative agents.
4. ATCEMS System providers shall not discourage any patient (or legal patient representative) from seeking medical care from a physician or from accepting EMS transport to a hospital.

5. When a patient with present mental capacity wishes to refuse care:
   - The patient will be instructed that the evaluation and/or treatment is incomplete due to the limitations of the pre-hospital care environment;
   - The providers will attempt to identify any patient perceived obstacles to treatment/transport and make reasonable efforts to address these obstacles. This includes but is not limited to the offer of transportation without treatment, or the offer of transportation to a facility not recommended by protocol. These should be offered only for the purpose of facilitating additional evaluation and/or treatment which would otherwise be refused.
   - The provider will inform the patient of the risks of refusal and benefits of treatment/transport in accordance with their presenting complaint. It should be explained that the risks described are not comprehensive due to the diagnostic limitations of the pre-hospital environment and that their refusal may result in worsening of their condition, serious disability or death.
   - The patient will be advised that they should seek immediate medical care at an Emergency Department or with their own physician and that they may call 911 again at <u>any</u> time if they wish to be transported to the hospital or if their condition changes or worsens.

Documentation:

1. The provider must document facts sufficient to demonstrate the patient's present mental capacity and understanding of his/her condition and the consequences of refusing treatment and/or transport to include those mentioned above.
2. If a patient wishes to refuse assessment, treatment and/or transport, have the patient sign (Against Medical Advice-AMA) relating to the refusal of specific assessment, treatment, destination recommendation, or transport and have a third party witness the signature.
3. If the patient refuses to sign the refusal form, the provider will document the circumstances under which the patient refused to sign.

Safe Transport of Patients

Standard:

To provide a safe method of transporting patients within an ambulance and protect the EMS system and personnel from potential harm and liability associated with the transportation of patients.

Purpose:

Without special considerations patients are at risk of injury when transported by EMS. EMS must provide appropriate stabilization and protection to all patients during EMS transport.

Application:

1. Drive cautiously at safe speeds observing traffic laws unless patient condition requires emergent transport in accordance with operational standards on emergency response/transport.
2. Tightly secure all monitoring devices and other equipment.
3. Ensure that all pediatric patient less than 40 lbs are restrained with an approved child restraint device secured as per manufacturer's instructions if not secured by other means as part of patient care.
4. Do not transport the pediatric patient who meets trauma activation criteria in a child seat that was involved in the collision.
5. Ensure that all EMS personnel use the available provider restraint systems during transport when not otherwise engaged in patient care activities.
6. Transport adults and children who are not patients, properly restrained, in an alternate passenger vehicle, whenever possible.
7. Do not allow parents, caregivers, or other passengers to be unrestrained during transport.
8. Do not hold or allow the parents or caregivers to hold pediatric patients during transport.
9. For patients with medical conditions that may be aggravated by stress, make every attempt to optimize safety.

OMD Modification or Revocation of Credential to Practice

Standard:

To define the revocation or modifications of a providers credential to any status other than that of a full and unrestricted credential to practice.

Purpose:

A certified/licensed provider's privilege to provide care in the ATCEMS System is granted at the discretion of the Medical Director upon completion of a defined credentialing process. The granting of this privilege assumes the provider accepts the responsibility to safeguard the patients cared for under the Medical Directors license through prudent action and competent clinical care. The Medical Director has a duty to supervise that clinical care and as a result may find it necessary to temporarily or permanently modify the providers credential to practice within the ATCEMS System.

Credential Status Definitions/Applications:

Unrestricted Status- Provider credentials to practice have been granted by the Medical Director after completing the prescribed credentialing process. This allows providers to practice unsupervised at their credential level in accordance with the Office of the Medical Director Clinical Operating Guidelines. This status is simply referred to as "credentialed."

OMD Administrative Hold – Providers Credentials are deactivated for a period of time while non-clinical administrative issues are reviewed and resolved. The OMD Administrative Hold is independent of but may be utilized in conjunction with an administrative action undertaken by the providers sponsor organization or other administrative authority. Based on the nature of the administrative action an independent OMD review may be conducted simultaneously or subsequent to any investigation or action by another agency. Reactivation is at the discretion of the Medical Director or their designee. Credential Badges must not be worn and patient care is prohibited.

Suspended – Providers Credentials are suspended by a System Medical Director pending a review of a clinical concern. After the OMD clinical review process is completed the provider may be returned to an unrestricted status, modified status or revoked by the Medical Director. Credential Badges must not be worn and patient care is prohibited.

Modified Credential Status- A Providers credential to practice are restricted or modified as part of the initial credentialing process or as the result of the performance improvement and education process. This may include, but is not limited to, increased call review, additional education/training, or supervised practice. The duration of the modification is at the discretion of the Medical Director and is dependent upon the terms/objectives of the modified practice period. Credential badges may be worn but patient care is limited to the terms defined by the OMD.

Voluntary Surrender- A provider with an unrestricted credential voluntarily surrenders their credential or is no longer affiliated with a System organization. The providers credential to practice is removed and the provider is no longer eligible to provide patient care within the System. Reintegration is at the discretion of the Medical Director and is subject to completion of the defined credentialing process. Credential badges must be returned to the OMD.

Revocation – Providers credential to practice is permanently removed by the Medical Director and the provider is no longer eligible to provide patient care within the System. Credential badges must be returned to the OMD.

OMD Administrative Hold:

The OMD Administrative Hold is applied in circumstances where non-clinical performance/behavior concerns or an administrative issue is raised by an agency other than the OMD. In all cases patient care is prohibited and credential badges must not be worn. These non-clinical issues may include, but are not limited to, the following:

1. **Lapse, Loss, or Suspension of TDSHS Certification or Licensure-** *At the time a providers TDSHS Certification/Licensure is allowed to lapse, the following process will apply:*

    a. Upon expiration of a provider's certification, an "OMD Administrative Hold" is automatically placed on the provider's Credentials for a period not to exceed three (3) months from the date of TDSHS certification/licensure expiration. During this time providers may submit a written request for an extension by the OMD based on compelling extenuating circumstances. Approval of such extension is at the discretion of the OMD. Without documented proof of renewal, upgrade or extension the Provider's Credentials will be considered voluntarily surrendered at the conclusion of the 3 month period. The provider must return all Credential badges to the OMD within five (5) business days.

    b. Upon proof of the renewal of TDSHS Certification/License the removal of the OMD Administrative Hold is subject to the successful completion of the Reintegration Credentialing Requirements (OMDR – 20).

2. **Separation from All System Registered Responder Organizations**- *To be credentialed in the System a provider must be associated with a Registered System Organization. The following outlines the process for Providers who separate from a Registered System Organization:*

    a. At the time a provider is no longer affiliated with any Registered Responder Organization their credential to practice is automatically placed in an OMD Administrative Hold with or without official notification of the OMD. A Provider is required to notify the Office of the Medical Director within one (1) business day of when he/she is no longer affiliated with a Registered System Organization. The Administrative Hold shall remain in place until the provider affiliates with another Registered Responder Organization or a period of 30 days has passed. During this time providers may submit a written request for an extension by the OMD based on compelling extenuating circumstances. Approval of such extension is at the discretion of the OMD. Without documented proof of affiliation or extension the Provider's Credentials will be considered voluntarily surrendered at the conclusion of the 30 day period. The Provider's System Credentialing Badges must be returned to the Office of the Medical Director.

    b. In addition ILS and ALS Credentialed Providers must continue affiliation with a "Tier 2 Organization" as defined by the Office of the Medical Director in order to maintain ILS or ALS Credentials. If a provider should separate from a Tier 2 Organization the conditions cited in (a) above apply. The provider may affiliate with a Tier 1 Organization but will only be credentialed at the BLS level.

3. **Action Taken By TDSHS** - *Any action taken against the provider's certification/license by the TDSHS (administrative review, suspension, etc.)*
   a. Any such action by TDSHS and any related documentation must be reported to the OMD within on the first business day after the notification is received. Failure to do so may result in suspension/revocation of Credentials.
   b. The providers Credentials may be placed on an immediate "OMD Administrative Hold" pending the completion of the TDSHS process. The OMD reserves the right to conduct its own evaluation concurrent or subsequent to the TDSHS action. If a separate evaluation is conducted by the OMD the Administrative Hold may be extended pending conclusion of the OMD review.
   c. The Chief Officer, Director, or Program Manager of the Responder's Organization will be advised of the Administrative Hold. If deemed appropriate, the leadership of other organizations within the System and/or TDSHS may be notified.
4. **Arrest for a crime that meets the reporting requirements** - Providers and their sponsoring organization are required to report to the OMD and TDSHS any arrests of a provider involving alcohol or drugs, or a felony arrest. If the organization takes employment action on a provider, the provider's credentials will be reviewed for OMD Hold based on the circumstances of the event. Individual providers and their respective Organizations are responsible to report any arrests of the provider involving alcohol, drugs or a felony directly to the OMD on or before two (2) business days after the arrest is made. Failure to do so may be considered an integrity violation resulting in immediate suspension and possible revocation. Reporting the event to the TDSHS is the responsibility of the individual provider and must be made in accordance with TDSHS requirements.
5. **FMLA/Military or other voluntary leave:** In the event a provider requests leave from their sponsoring organization that will exceed the minimum period described in the reintegration process (*OMDR - 20*) their credential will be placed on OMD Administrative Hold pending their return and successful completion of all elements of the reintegration process.

Process: The process for applying and removing the OMD Administrative Hold may vary based on the cause of the hold. The process is described for the specific circumstances described above but may be modified at the discretion of the OMD to accommodate the circumstances.

Notification: Notification of any of the above five (5) items from an Organization to the OMD should be made via e-mail. Appropriate details and circumstances of the event should be included in or attached to the electronic communication. The e-mail must be addressed to the Medical Director, Deputy Medical Director, OMD Chief of Staff and the Clinical Operations, Practices and Standards Coordinator.

Suspension*:*

A provider's credential to practice may be suspended if a System Medical Director believes that a provider's behavior or actions suggest a potential risk to the safety of the public or to future patients. These actions may include, but are not limited to, the following:

1. Clinical error
2. Action that may lead to revocation

Process: When a Medical Director becomes aware of behavior or actions that warrant suspension the Medical Director or their designee will notify the providers of their suspension as soon as possible. The Chief Officer, Director, or Program Manager of the responder's organization will be also be advised of the suspension. *The provider is no longer authorized to provide patient care for <u>any</u> organization that receives medical direction from the Austin-Travis County Office of the Medical Director.* The provider will be scheduled to discuss the events leading to the suspension but shall remain suspended pending additional investigation of the event. The length of the suspension will be determined by the Medical Director. Subsequent to the Medical Directors review of the investigation the Medical Director may return the providers credential to unrestricted status, modify the providers credential to practice, or permanently revoke the providers credential to practice.

Modified Credential Status:

At times it may be necessary to restrict or modify a provider's credential to practice for the purposes of initial or ongoing training or subsequent to an evaluation of a clinical concern. The Medical Director may modify a provider's credential as needed including but not limited to:

1. **Candidate Status:** A provider who is new, progressing in the System, or returning after a sustained absence as described in the reintegration process (*OMDR - 20*) will be granted a provisional credential to facilitate their completion of the OMD approved credentialing process. At the conclusion of the credentialing/re-credentialing process the provider may be granted an unrestricted credential or an additionally modified credential as necessary.
2. **Increased call review:** Providers may be subjected to increased call review when a Medical Director needs to more closely monitor a provider's clinical practice. This may include all aspects of clinical care including but not limited to direct observation or documentation review, and may include all responses or may be directed at a specific call or patient type. When increased call review is utilized the provider will be informed of the nature and duration of the increased call review. At the conclusion of the prescribed observation period the provider will be returned to unrestricted status or advised of any additional action required by the Medical Director.

3. **Temporary assignment:** A provider may be temporarily reassigned or asked to complete an educational process in an effort to address a behavioral or knowledge deficiency.

Process: When it is necessary to modify a provider's credential to practice the Medical Director or their designee will notify the provider of the cause, the objective(s) and the duration of any modification of the providers credential. Where the modification of the providers credential is defined as part of the initial or re-credentialing process the published process shall be considered sufficient notice of the modification. Practice outside of the prescribed modification may result in permanent revocation of the providers credential to practice.

Voluntary Surrender:

A provider may wish or need to leave the System for an undefined period of time. If the provider's credential is in good standing with the OMD the provider may voluntarily surrender their credential to practice. Providers who have surrendered their credential and wish to return to the System are required to complete the re-credentialing process.

Process: The provider who wishes to surrender their credential to practice shall notify the OMD in writing of their desire to surrender their credential to practice and return their credentialing badges to the OMD.

Revocation:

The Medical Director may remove the credential to practice of any provider who they believe poses a potential risk to the patients cared for under the Medical Directors license. The decision to revoke a provider's credential to practice will be based on an investigation conducted by the Office of the Medical Director independently or in conjunction with the provider's organization(s) or other appropriate authority. The decision of the Medical Director to revoke a provider's credential to practice is final and not subject to appeal. Actions that may result in revocation include, but are not limited to, the following:

1. **Integrity violation:** The Medical Director has the ability to delegate the privilege to practice under their medical license. In order to do so the Medical Director must trust that the provider will safeguard the Medical Directors license by delivering care consistent with the moral, ethical and clinical expectations outlined by the Medical Director. This trust is a fundamental element of the Medical Director's willingness to delegate their practice and once lost cannot be effectively restored. Any suspected integrity violation will result in immediate suspension pending further investigation. Integrity violations include but are not limited to knowingly providing, verbally or in writing, false or incomplete information to a patient, other healthcare provider, Medical Director or their designee. In addition any falsification or alteration of a medical record, incident reports or documents relating to a clinical event or departmental investigation is considered an integrity violation.
2. **Intentionally withholding care:** this may include but is not limited to the willful failure to assess a patient seeking evaluation, the withholding of care for an identified condition, or the failure to make an unconditional offer of transport.

3. **Intentionally harming a patient**: this may include but is not limited to the use of physical force, a medical procedure or device, or excessive noxious stimulus with malicious intent to cause harm or pain. This does not apply to circumstances where it may be clinically appropriate to restrain a patient or when a provider uses physical force in defense against a threat of violence against themselves or others.

4. **Impairment by drugs/alcohol while on duty**: impairment by alcohol or other drugs or willfully reporting for a shift while taking medication known by the provider to cause impairment that may affect their ability to safely care for a patient. If a concern is identified a System Medical Director should be notified immediately and the provider suspended pending further investigation. The failure to submit to any subsequent drug or alcohol testing is grounds for permanent revocation of their credential to practice.
5. **Failure to remediate**: is considered a failure by the provider to modify their behavior and actions after being redirected through a performance improvement process, education, supervised practice or counseling by a Medical Director or their designee. In addition the failure to comply with or submit to any prescribed education (e.g. continuing education, competencies, etc.) or remediation process is considered a failure to remediate.

Process: The Medical Director will review the available information from the investigation process. If the Medical Director no longer wishes to credential the provider to practice under his/her license the following will occur:

a. The OMD will provide verbal notification to the provider and his/her provider agency(ies) within three (3) business days of the decision. The provider must return all Credential badges to the OMD within five (5) business days.

b. The OMD will provide written notification to the provider and his/her provider agency(ies) within three (3) business days of the decision.

c. At the discretion of the Medical Director, unless otherwise defined by rule, written notification of the Texas Department of State Health Services will occur within five (5) business days.

Additional Reference Documents:

Clinical Standards CS – 04, CS – 25, and OMD Reference Documents OMDR – 09, OMDR - 20.

System Design

Standard:

Define the design of the system and how the organizations integrate to form one System of Care.

Purpose:

The ATCEMS System is comprised of multiple agencies that include a diverse group of healthcare professionals including Communications Specialists, First Responders, Transport Providers, Hospital Networks (including specialty receiving centers) and Physicians with varying specialties in the community. Together, this "System" provides the basis for seamless delivery of care to acutely ill or injured patients in our community.

Application:

The ATCEMS System maximizes the opportunity to deliver appropriate care to patients as defined by the Protocols, Procedures and Standards established by the OMD (Collectively the Clinical Operating Guidelines). The goal of these documents is to provide safe consistent and sophisticated care to the citizens and visitors of the City of Austin and Travis County.

Medical Direction for all EMS Providers and First Responders flows from the EMS System Medical Director to each Texas Department of State Health Services (DSHS) Licensed System Organization, via Provider and First Responder Organization Agreements. In order for Medical Direction to flow from the Licensed Organization to the System Credentialed Providers they must respond and provide patient care with the approval of their Licensed Organization (s) within the State of Texas only.

Should they provide COG level patient care at preplanned events not approved by their System Licensed Organization and/or outside the State of Texas; System Medical Direction does not apply. This provision does not preclude Providers from "stopping to render aid".

1. All medical care within the EMS System should be provided in accordance with the current Clinical Operating Guidelines; by individuals currently certified/licensed by the Texas DSHS and credentialed by the OMD.
2. Individuals holding current Qualifications may deliver specialty care as defined by the COGs when appropriate equipment and conditions exist.
3. All organizations providing medical care as part of the EMS System will comply with Texas Department of State Health Services requirements for Provider or First Responder Organization Licensure.
4. All 9-1-1 requests for care will be managed by EMS Communications according to the requirements of the currently adopted Medical Priority Dispatch System. This includes call triage, pre-arrival instructions and response determinants.
5. All Tier 2 First Response Organizations will be capable of delivering, at a minimum, Basic Life Support care (BLS) as defined by the OMD.
6. First Response ILS and/or ALS level of care is supplemental to the System minimum requirements.
7. All System First Response Organizations must maintain the BLS supplies identified on the Minimal Equipment List. If a System Registered Organization chooses to equip an ILS or ALS Credentialed Provider, the equipment must be supplied and maintained according to the appropriate Minimal Equipment List for that level of care.

8. Standby and on-site Special Event Providers Minimal Equipment will be determined based on the need of the specific event.
9. Treatment of patients with prescription or non-prescription medications that are not included in the COG or not approved by OLMC is considered practicing outside the provider's scope of practice.
10. The use of Equipment or Supplies not approved by the System Medical Director during patient care is prohibited. Approved items are specified per the Equipment Lists for each System Organization Tier and Credentialing Level. Refer to OMDR 1, OMDR 4, OMDR 5, OMDR 12 and current Transport Unit MELs
11. During unusual or extreme conditions or circumstances, the above criteria may be modified by the Medical Director to best meet the needs of the patients of the EMS System.

Transport Destination Decision

Standard:

Define how a transport destination decision is reached taking into consideration the specialized care needs of specific conditions and the needs and preferences of our patients.

Purpose

Patients treated by the ATCEMS System may have complex clinical conditions that require care at facilities with specialized capabilities or expertise in treating these conditions. In the absence of the need for specialized care patients may want to be transported to facilities based on their personal preference or the location of their physician and records. Whenever possible the providers of the ATCEMS System will provide patients with transport to a prescribed medical facility of their preference.

Application:

1. The following assumes the patient or the patient's guardian (in the case of a minor) has decision making capacity in accordance with the Refusal of Treatment/Transportation Standard and the Determination of Capacity Procedure. In the absence of decision making capacity or in cases where consent is implied the patient should be transported to the closest appropriate facility. If a patient wishes to refuse treatment/transport but has been determined to lack the capacity to do so providers should consult their supervisor and OLMC in accordance with the Refusal of Treatment/Transportation Standard.
2. When a patient presents with a clinical condition requiring specialized care the transporting providers will transport the patient to the closest facility that offers the specialized care for that patient's condition. (STEMI, Stroke, Trauma, Resuscitation Center, Pediatric care, etc).
3. If a patient refuses to go to the recommended facility transport providers will explain the benefit of transport to the recommended facility and the risk of transport to another facility. If the patient still refuses transport to the recommended facility transport providers will recommend transport to the next closest appropriate facility for their condition.
4. If a patient continues to refuse transport to the alternative specialty care facility or requests transport to a facility that lacks the ability to care for the patient condition the transport provider will make every effort to explain the need for the specialty care facility. These efforts may include but are not limited to contacting the patient's physician, a supervisor, on-call Medical Director or OLMC at the facility the patient wishes to be transported to.
5. If after the efforts described above the patient continues to request transport to a facility not recommended for the patient's condition the transport providers will transport the patient to the facility of the patients choosing. They should notify their supervisor and the receiving facility of their transport. On arrival at the facility the crew should consult with the attending physician to determine if the patient will be transferred. If such a transfer is imminent the provider should contact their supervisor and remain immediately available to transfer the patient after the required screening examination by the receiving facility. The duration of this availability is to be determined by the supervisor based on the patient's condition and the anticipated time to transfer.

6. If a patient does not have a condition that requires transport to a specialized facility as prescribed by protocol the providers will transport the patient to an approved system facility of the patient's choosing. When a patient requests transport to a facility other than an approved system facility the transport decision should be made in consultation with a supervisor. If in the provider's opinion the patient's condition warrants transport to a closer facility for rapid stabilization the need for this destination should be explained to the patient and every effort made to deliver the patient to the closest appropriate facility. These efforts may include but are not limited to contacting a supervisor or OLMC. If the patient continues to refuse the recommended destination the patient will be advised of the associated risks and transported to the destination of their choosing.
7. If the patient has an MOT or if transport has been arranged by another healthcare provider the transport provider should transport the patient to the destination indicated by the MOT or sending healthcare provider in accordance with the MOT Standard.
8. If the patient does not have a condition that requires specialty care as prescribed by protocol and does not have an expressed preference the transport provider may transport the patient to the closest appropriate facility.
9. In the event multiple patients from the same event are to be transported in one unit the patient with higher acuity determines the transport destination. Where the need for different facilities can be anticipated reasonable efforts should be made to split the patients at the scene as long as doing so does not place either patient in danger.
10. Any refusal of treatment or recommended transport destination should be performed and documented in accordance with the Refusal of Treatment/Transport Standard and Determination of Capacity Procedure.

Transfer of Care to Provider of Lesser Credentials

Standard:

To define circumstances and establish a process for transferring patient care from a higher credentialed provider to one of lesser credentials.

Purpose:

Providers may be presented with multiple patients, limited resources, or patient conditions requiring early rapid transport in order to maximize potential outcome (for example one critically injured patient and multiple non-injured occupants in a motor-vehicle collision). These situations may require that patients be left in the care of a lesser credentialed provider. The ultimate decision of whether or not to initiate transport of a critically ill or injured patient while awaiting additional resources rests with the on-scene Provider with the most advanced level of system Credentials as defined in Authority for Patient Care.

Application:

When transferring care to a provider of lesser credentials the following applies:

1. Leaving patients on-scene should not be a routine procedure. It is to be considered only when a patient requires immediate transport in order to maximize potential outcome.
2. The transport Provider may transfer patient care to a Provider of lesser Credentialing when transfer of established care is **not** beyond the scope and/or training of the Provider(s) assuming care (i.e., an intubated patient may not be left with a System Responder level provider or EMTB Credentialed Provider).
3. All patients should be accounted for, assessed and triaged, and appropriate additional resources requested prior to transport of the critically injured patient.
4. No patient requiring immediate advanced stabilization (i.e., pleural decompression, intubation, defibrillation etc.) is to be left on-scene awaiting additional resources unless an appropriately credentialed and equipped Provider is present and able to perform such care.
5. Mass and Multi-casualty incident transport decisions will be made by the on-scene command structure.

STEMI Alert Criteria

In order to more consistently assess and apply the notification for a STEMI Alert the following criteria have been developed in conjunction with Mission Lifeline.

A STEMI Alert should be called when a patient is currently **"symptomatic"** for an Acute Coronary Syndrome (ACS) event **AND** a new or presumably new ST elevation ≥1 mm in two anatomically contiguous leads **AND** does not have exclusion criterion listed below in the ACS Consultation section.

The STEMI Alert notification should 1st be "declared" to Communications via radio or phone. Then as soon as possible transmit a 12 lead ECG. Whenever possible the patients name should accompany the 12 lead ECG.

The transport Hospital should be notified of the STEMI Alert as soon as practical by Communications and the Alert must be included in the Transport radio report to the Hospital with the patient condition information.

ACS Consult Criteria

The Provider should not declare a STEMI Alert and should consult with the anticipated receiving Hospital prior to transport. And, transmit a 12 lead ECG with "ACS Consult – Facility Name" in the patient ID field.

- ❑ Patients that are currently "**asymptomatic**" for an ACS event however, have ECG readings consistent with the above STEMI Alert Criteria.

OR

- ❑ Patients who are "**symptomatic**" for ACS and have evidence of Isolated V1 and V2 elevation only, LBBB, LVH, Early Repolarization, Ventricular/Ventricular Paced, Diffuse ST Elevation, or Non-Specific ST Changes or other type "Abnormal" ECG findings including poor quality ECG tracing.

The declaration of the Alert or use of the ACS Consult option should be based upon the patient's current condition and the Provider's judgment.

Stroke Alert Criterion

This criterion is for patients exhibiting current signs and symptoms of a Stroke as evidenced by using the "Cincinnati Prehospital Stroke Scale" (CPSS) Clinical Procedures CP - 14.

If the patient's current presentation and history (last known well) are suggestive of stroke (≤ 8 hours), early notification **(STROKE ALERT)** and rapid transport to a designated Stroke Center Appendix A – 02 is warranted. The "ALERT" status declaration is made to Communications for their assistance (as needed) in determining the most appropriate transport destination (based on time and distance), notification of the selected Hospital and the most expeditious mode of Transport (Ground or Air).

Patient's that are **without a current** Stroke presentation (s) and have a history suggestive of a T.I.A. (≤ 8 hours); are to be transported to a Stroke Center for an evaluation. These T. I. A. patients' are **not** considered Stroke Alert Patients.

Request for Service by Individuals at a Hospital

Purpose:

To provide a standardized response to individuals who are at a hospital facility capable of evaluating and treating them who contact 911 for EMS transport to another hospital.

Application:

This clinical standard applies to individuals (not hospital staff) who are:

1. Calling from a Hospital facility, Psychiatric hospital, or Rehabilitation facility (waiting room, emergency department, floor, physical building/grounds, or parking facility) **–AND-**
2. Are currently registered to be evaluated **-OR-** have already been evaluated or treated by the Emergency Department **-OR-** currently under the care of a hospital.

Process:

1. When a request for service is received by 911, EMS Communications Medics will process the call in accordance with MPDS protocols until it's determined that the patient meets INPT5 criteria.
2. If it is determined that the caller meets any of the criteria described above, the call type should be changed to Priority In-Patient Evaluation (INPT5) and the nearest EMS Commander should be assigned to the call without a transport unit.
3. EMS Communications will then contact the Hospital Department Charge Nurse to advise that a 911 call has been received from their facility and that an "EMS Commander" will be enroute.
4. Upon arrival the Commander will locate, assess the patient, and confer with hospital staff.
5. If the patient meets the criteria above and, does not have a new or unaddressed complaint the Commander should advise the patient to seek re-evaluation at the current Hospital or Emergency Department. If the patient does not wish to do so the Commander may, at their discretion, decline EMS transportation of the patient.
6. If the patient meets criteria above and, the Commander feels the patient would benefit from EMS transport to a different hospital they may request a transport unit.
7. In all cases where patient contact is made by EMS personnel the assessment shall be documented in the ePCR in accordance with prescribed standards.

National Registry Renewal

Standard:

To establish a process for System Credentialed Providers to maintain National Registry (NR) at their current level regardless of System Credential level.

Purpose:

The purpose of this Standard is to provide a pathway for System Credentialed providers to maintain their current Intermediate/AEMT or Paramedic National Registry level independent of System Credential.

Application:

1. Only credentialed providers in good standing with a registered System Organization may participate in this renewal program
2. The provider must complete all National Registry requirements
3. The provider must complete all OMD-required CE at their current National Registry level
4. The provider must complete all OMD-required yearly skills competencies for their current National Registry level (regardless of System Credential level). ALS skills testing opportunities are currently offered through the Austin/Travis County EMS department. ESDs with ALS capabilities may also skills test internally at the ALS level. ESDs/organizations with ILS/Advanced EMT capabilities may skills test internally at the ILS/Advanced EMT level. Skills testing sheets may be acquired through the System Education and Professional Development Coordinator.
5. Each organization is responsible for certifying that all national Registry requirements are met for each provider. A signed statement from the organization stating that the provider has met the national Registry requirements should be transmitted to the System Education and Professional Development Coordinator at the Office of the Medical Director and copied to the System Clinical Operations, Practices, and Standards Coordinator.
6. Upon successful completion of the entire process/program, and receipt of the certifying e-mail, the Medical Director, at his discretion, electronically approve the National Registry renewal
7. Providers that are Nationally Registered and System Credentialed at the ECS/SR or EMT levels will continue to process applications with their organization's training staff.

System Protocols

Version 020415 (MD 14-09)

OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

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Legend for Table of Contents Abbreviations

Cardiac, Adult..... C
Cardiac Arrest, Adult .....CA
Medicine, Adult.....M
Obstetrical/Newly Born.....OB
Cardiac, Pediatric .....PC
Cardiac Arrest, Pediatric .....PCA
Medicine, Pediatric.....PM
Respiratory, Pediatric.....PR
Trauma, Pediatric..... PT
Respiratory, Adult..... R
Special Operations.....SO
Trauma, Adult.....T
Universal ..... U

Symbol indicating Protocol (s) within a COG .....

Universal Protocols: All Patients

OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

Universal Patient Care

History:	Exam:	Differential:

• Location
• Onset
• Duration
• Quality
• Radiation
• Severity
• Precipitating events
• Modifying factors
• Associated symptoms
• S-A-M-P-L-E
• Past Medical/Surgery
• Family
• Social
	• Primary Assessment
	• Airway
	  • Breathing
	  • Circulation
	  • Disability
	  • Expose
	• Secondary Assessment
	  • HEENT
	  • Respiratory
	  • Cardiovascular
	  • Abdomen
	  • Extremities
	  • Neuro
		• Vascular
		• Infectious/Inflammatory
		• Trauma/Toxins
		• Autoimmune
		• Metabolic
		• Idiopathic
		• Neoplastic
		• Congenital

S — **Demonstrate professionalism and courtesy**
Scene/Crew Safety/PPE
Appropriate Equipment to Patient Side — **S**

↓

S — **Initial Assessment/Physical Exam**
- Adult Assessment Procedure CP-06
- Pediatric Assessment Procedure CP-07 — **S**

↓

S — **Vital Signs**
BP, pulse, resp. rate at least every 15 minutes
Temperature if pt. with hx fever or hot to touch,
Monitor ECG, pulse ox, and ETCO2 as appropriate — **S**

↓

S — Consider where appropriate:
Airway Protocol R-01 or PR-01
Spinal Motion Restriction Protocol U-05
Glucose Assessment Procedure CP-10 — **S**

B — **12 Lead ECG Procedure CP-01** — **B**

I — Consider **IV Protocol U-02** — **I**

P — Consider **Cardiac Monitor** — **P**

↓

Appropriate Protocol Adult or Pedi

↓

M — **Contact Destination or Medical Control**
if Patient does not fit a Protocol Clinical Standard CS-01 — **M**

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

If the patient meets any Rapid 12 lead criteria (CR-34): EMT providers attach ECG electrodes ASAP and ALS providers are to obtain a 12 lead ECG within 5 minutes of ALS patient contact. Transmit 12 Lead ASAP

Maintain all appropriate medications and procedures that have been initiated at the referral agency or institution

Pearls:
- Minimum exam for every patient is: V/S, mental status/GCS, location of injury or complaint and pain scale.
- For the dosing of medications or electrical therapy an adult is defined as ≥ 37 Kg.
- For the dosing of medications or electrical therapy a pediatric patient is < 37 Kg and also defined by the PEDIA Tape. If the patient does not fit on the tape, they are considered an adult
- Patients should be assessed for history of motion sickness and may be treated per nausea/vomiting protocol

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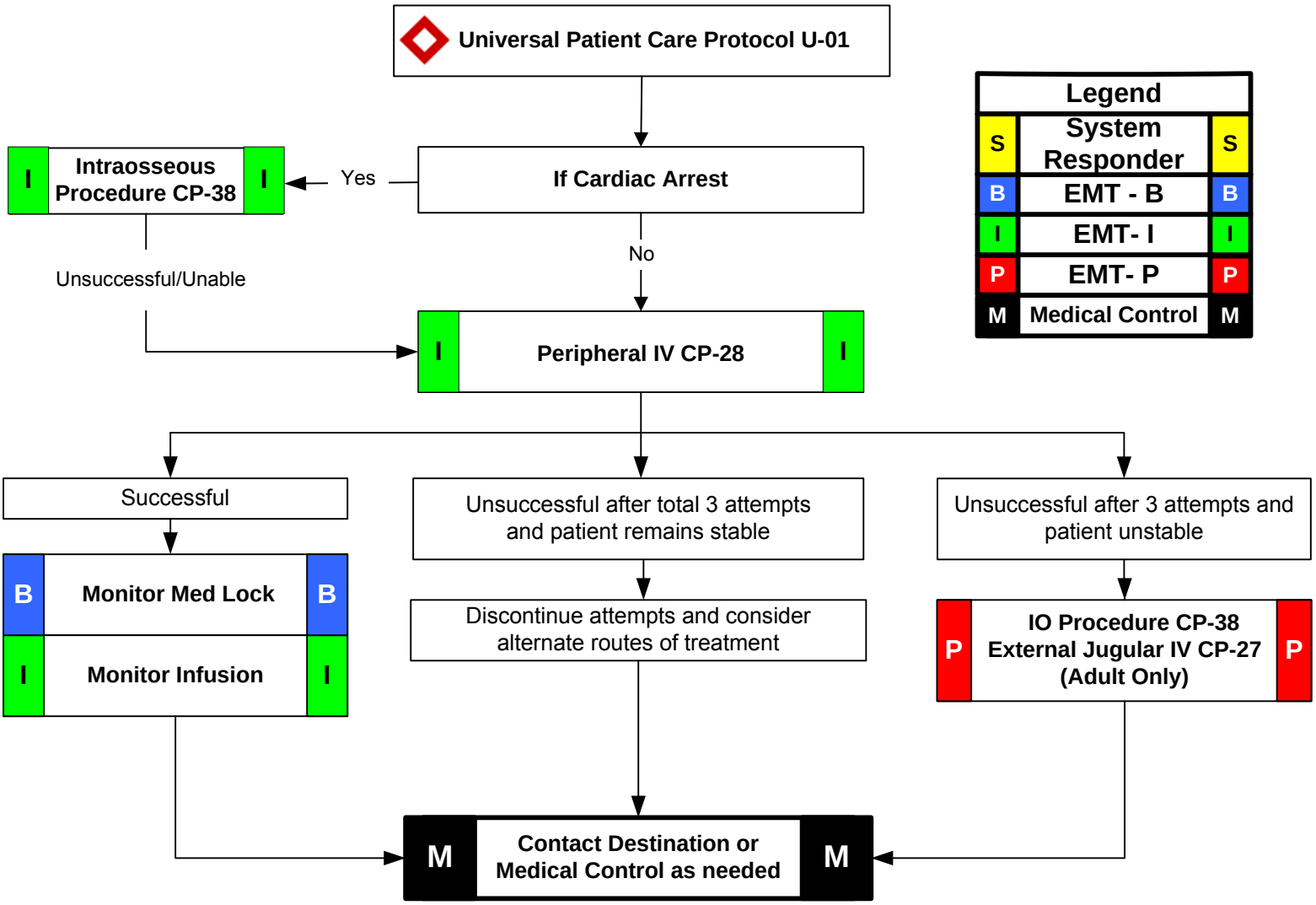
IV Access



Pearls:

- In the cardiac arrest patient, any preexisting dialysis shunt or external venous catheter may be used.
- Intraosseous with the appropriate adult /pedi device.
- May use **Lidocaine 40 mg (Adult only not in cardiac arrest) (CP-38)** to reduce pain of infusion.
- Any prehospital fluids or medications approved for IV use, may be given through an intraosseous IV.
- All IV rates should be kept at KVO (minimal rate to keep vein open) unless administering fluid bolus/medications.
- Upper extremity IV sites are preferable to lower extremity sites (except Cardiac Arrest).
- Lower extremity IV sites are contraindicated in patients with vascular disease or diabetes.
- Vasoactive drips should be infused through large bore IV catheter through the antecubital or larger vein
- In post-mastectomy patients, avoid IV, blood draw, injection, or blood pressure in arm on affected side.
- **In transported <u>Trauma Arrest</u> patients the IO should be performed enroute to the hospital.**

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Patient Safety

Follow Universal Patient Care Protocol U-01

Refer To Minimal Equipment To Patient/Bedside Standard CS - 20

For All Weight-Based Drug Administration refer to Medication Dose Charts CR-35 or CR-36
Do Medication Administration Cross Check CP-02 for all medications

At the beginning of each shift document the presence of all equipment, medications, PPE and supplies. OMD credentials on your person.

If supplies fall below required levels, restock at the nearest appropriate location. If dispatched to a call that may require depleted supplies, contact communications or your Command Staff.

If massive depletion of supplies (e.g., post-cardiac arrest) and/or contamination, remain out-of-service until re-supplied and clean and contact communications or your Command Staff.

Medical Equipment that is System designated for multi-patient use, should be "cleaned & disinfected' according to manufacturers recommendations, with an EPA approved product after each use.

Any patient care equipment (including single patient use disposables) that fails to function as it was intended while managing a patient (**equipment that fails while on a call, either preventing its use on the patient or fails while attached to the patient**) will be safely secured, removed from service, and reported to the Office of the Medical Director (Clinical Procedure CP – 67). This does not include medications or equipment failures due to operator error.

Agencies should maintain all medical equipment in accordance with manufacturers recommendations including: periodic testing, calibrations and/or recertifying.

If medication error, clinical misadventure, or other adverse patient outcome, contact the on-call Medical Director or their designee.

Appropriate Protocol

M **Contact Destination or Medical Control if the patent does not fit a Protocol Clinical Standard CS-01** M

Transport Patient per Patient Transport Standard CS-28, CS-31, Appendix A-02, Reference CR-13

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

Notification Sequence:

- If an event listed in the Clinical Event Review Process requires automatic Medical Director Notification, contact the on call Medical Director or their designee (DMO,FMO on call) immediately. These contacts should be made via Communications over a recorded line.
- If any other adverse clinical outcome, notify the Medical Director or their designee (DMO on call) as soon as possible via email and/or cell phone. The probability of disciplinary action is greatly diminished if the provider with a misadventure contacts the OMD/DMO directly.
- If an error occurs without adverse patient outcome and/or a "near miss" occurs, contact your DMO or FMO or Organization's PM/PI person.

OFFICE OF THE MEDICAL DIRECTOR
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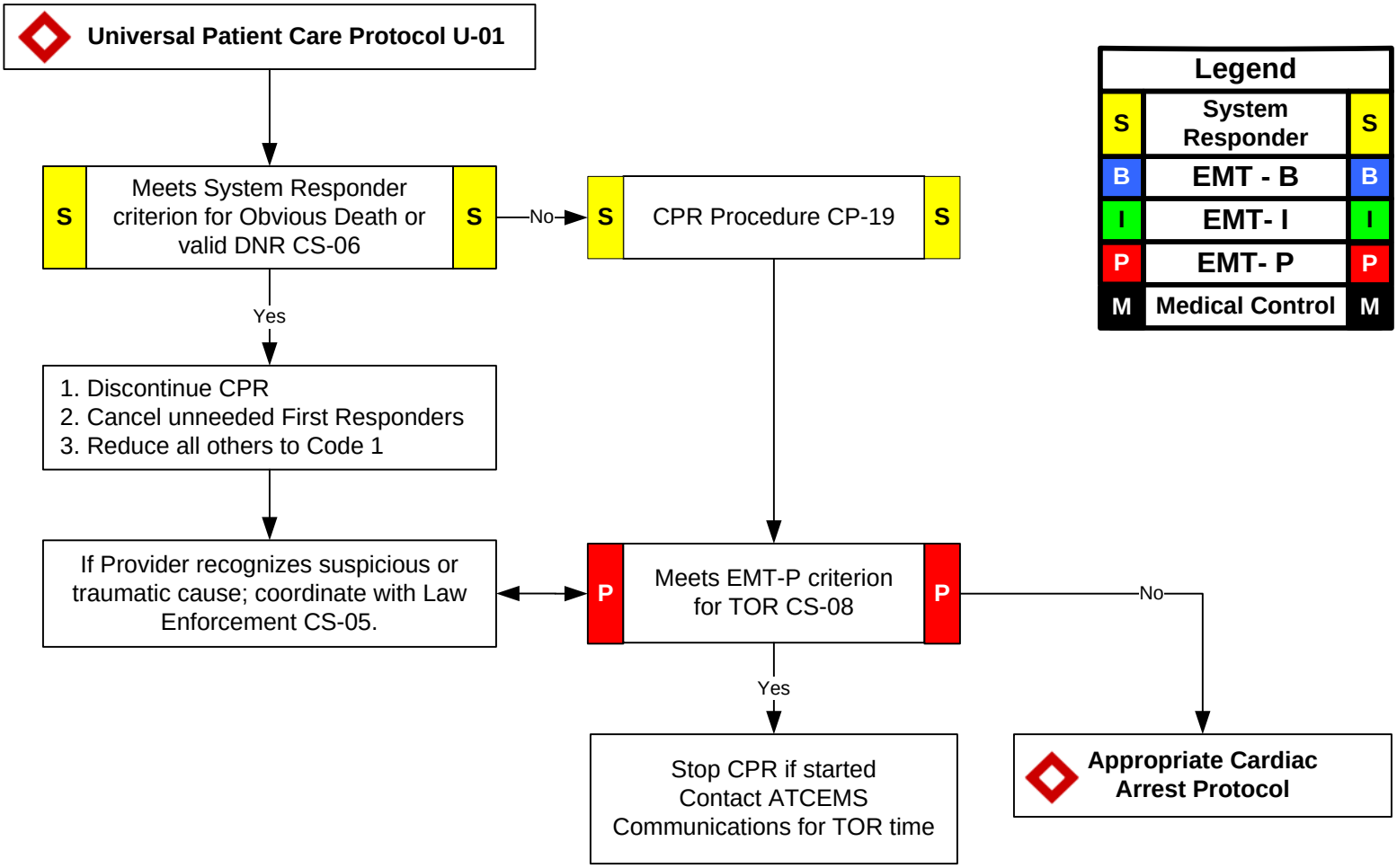
Deceased Person

History:	Signs/Symptoms:	Differential:
Past Medical History Recent Illness Last seen alive Mechanism Trauma/Medical Resuscitation efforts PTA	Dependent Lividity Pulseless Apneic Decapitation Rigor Mortis	Primary Cardiac Disease Homicide Diving Trauma Asphyxiation



Pearls:

- Anytime a provider feels the need to have Law Enforcement on the scene they should make the request via EMS Communications (suspicious death or assistance with family/bystanders).
- Victim Services should be requested via EMS Communications as soon as possible for deceased person with family members present.

Criteria for withholding resuscitation; one or more of the following is present:

- Rigor mortis and/or dependent lividity;
- Decomposition, Decapitation, Incineration;
- Obvious mortal wounds (severe trauma with obvious signs of organ destruction)
- Patient submersion > 20 minutes from arrival first Public Safety to patient positioned for resuscitation.
- Patients with suspected traumatic mechanism found pulseless and apneic by first provider on scene with no respiratory effort after basic airway maneuvers **AND,** Organized electrical activity on ECG with rate < 40 BPM.
- Fetal death with a fetus < 20 weeks by best age determination available at scene

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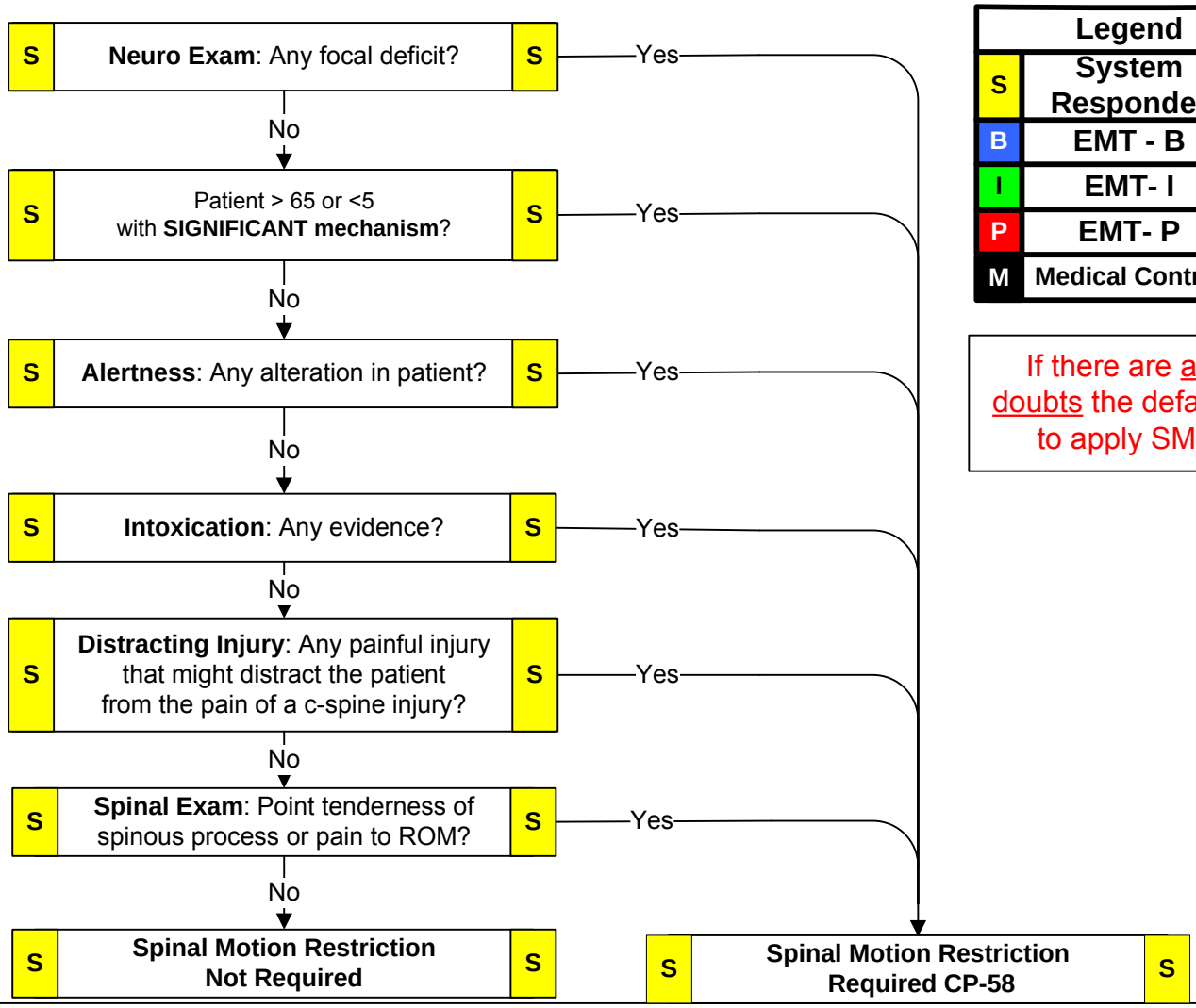
Spinal Motion Restriction (SMR)



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

If there are any doubts the default is to apply SMR

Pearls:

- **Recommended Exam: Mental Status, Skin, Neck, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- **The acronym "NSAIDS" should be used to remember the steps in this protocol.**
- **Consider SMR in any patient with arthritis, cancer, dialysis or other underlying spinal or bone disease.**
- **The decision to NOT implement SMR in a patient is the responsibility of all Providers/Responders.**
- **In very old and very young, a normal exam may not be sufficient to rule out spinal injury.**
- Significant mechanism includes high-energy events such as ejection, high falls, and abrupt deceleration crashes and, may indicate the need for SMR.
- **Patient's Range of Motion (ROM) should NOT be assessed if patient has midline spinal tenderness**. If ROM is assessed, the patient should touch his chin to his chest, extend his neck (look up), and turn his head from side to side (shoulder to shoulder) without spinal pain.

SMR Guidelines:

- Long Spine Boards (LSB) have both risks and benefits for patients and have not been shown to improve outcomes. The best use of the LSB may be for extricating the unconscious patient, or providing a firm surface for compressions. However, other devices may be appropriate for patient extrication and movement, including the scoop stretcher.
- Utilization of the LSB should occur in consideration of the individual patient's benefit vs. risk.
- Patients who should be immobilized with a LSB include: Patients with blunt trauma and distracting injury, intoxication, altered mental status, or neurologic complaint (e.g. numbness or weakness), and non-ambulatory blunt trauma patients with spinal pain, tenderness, or spinal deformity.
- Patients with penetrating trauma and no evidence of spinal injury do not require spinal immobilization. Patients who are ambulatory at the scene of blunt trauma in general do not require immobilization via LSB, but may require cervical collar and spinal precautions.
- Whether or not a LSB is utilized, spinal precautions are STILL VERY IMPORTANT in patients at risk for spinal injury. Adequate spinal precautions may be achieved by placement of a hard cervical collar and ensuring that the patient is secured tightly to the stretcher, ensuring minimal movement and patient transfers, and manual in-line stabilization during any transfers.
- If the Provider or First Responder has a concern for spinal cord injury not addressed by these criteria; patients may be SMR at the Provider's/Responder's discretion. **If a patient has been SMR it should not be removed pre-hospital**.

Adult Protocols: Patients ≥ 37 Kg

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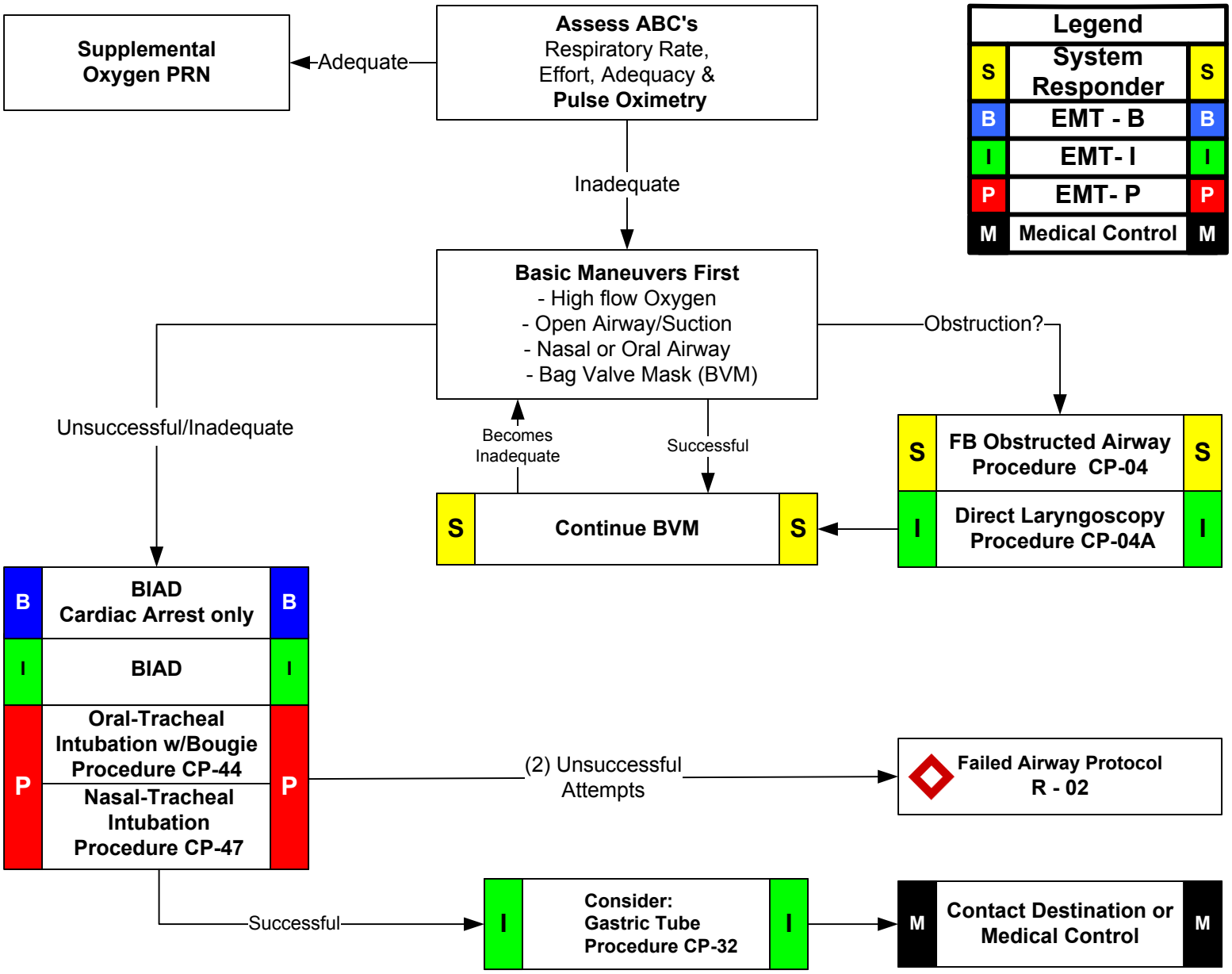
Airway



Pearls:

- **This protocol is only for use in patients ≥ 10 yrs old or ≥ 37 Kg or patients longer than the PEDIA Tape.**
- **Capnometry (EtCO2) and pulse oximetry is mandatory with all methods of intubations. Colorimetric(EZ Cap) may be used for initial CO2 detection when continuous capnometry is not immediately available. Document Results.**
- **If an airway is being maintained by BVM with Pulse Oximetry ≥90% advanced airway is not required.**
- **If difficult intubation is anticipated consider early use of BIAD, or assisted intubation with Bougie, Sellicks/BURP maneuver.**
- **If intubation attempt fails CHANGE something: different blade, smaller tube size, or use adjunctive maneuver.**
- **An intubation attempt is when the laryngoscope blade passes the plane of the teeth or the tube is inserted into the nares.**
- **Ventilatory rate should be 10 - 12 per minute OR to maintain ETCO2 or 35-45 (when appropriate).**
- **Maintain SMR in those patients with suspected spinal injury.**
- **Hyperventilation in head trauma patients when herniation is suspected should be done to maintain ETCO2 of 30-35**
- **For advanced airways secure airway.**

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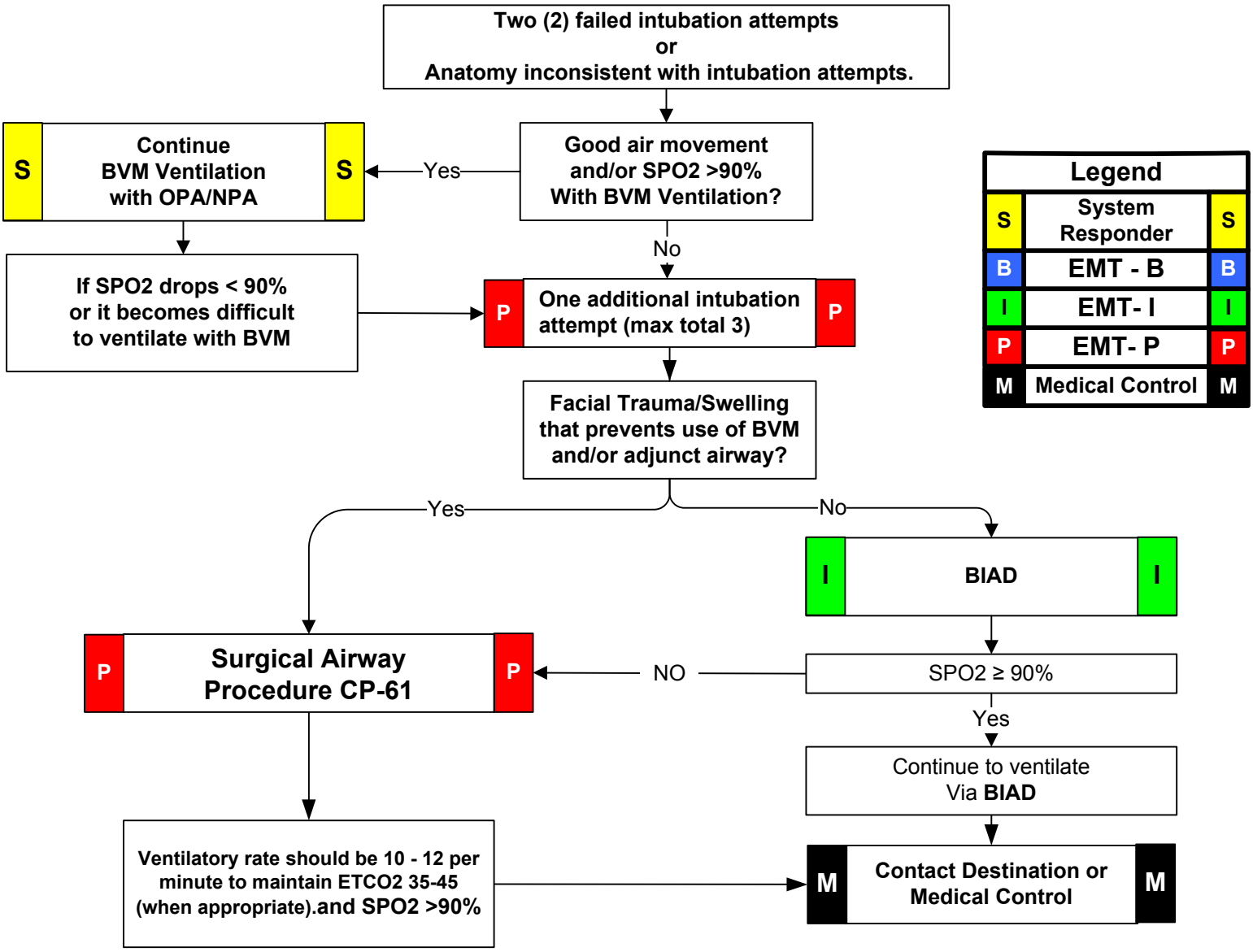
Adult Failed Airway



Pearls:

- **Capnometry/Capnography (EtCO2 or Color Metric) is mandatory with all BIADS, Endotracheal intubations & Surgical airways. Continuous ETCO2 when available should be used on all Advanced Airways. Document results and attach wave form strips once placed on ATCEMS stretcher and just prior to hand off at Hospital.**
- **If an airway is being maintained by BVM with Pulse Oximetry >90%, it is acceptable to maintain basic airway measures instead of using a BIAD or ET.**
- **A secure airway is when the patient is now appropriately oxygenated and ventilated.**
- **If a BIAD is providing good ventilatory exchange and is functioning appropriately: DO NOT REMOVE or EXCHANGE.**
- Maintain SMR in those patients with suspected spinal injury.
- Sellick's and **or BURP** methods should be used to assist with difficult endotracheal intubations.
- If first intubation attempt fails, make an adjustment and try again:
  - Different laryngoscope blade - Change head positioning - Different ETT size -Different Provider
- Continuous pulse oximetry should be used and documented.
- Notify Destination Hospital ASAP regarding patient's difficult or failed airway.

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Pulmonary Edema

History:	Signs & Symptoms:	Differential:
• Past medical history • Medications (digoxin, lasix) • **Viagra, Levitra, Cialis** • Cardiac history (myocardial infarction, CHF) • Medication Compliance • Dietary Indiscretion	• Bilateral rales • Jugular vein distention • Pink, frothy sputum • Peripheral edema • Diaphoresis • Hypotension, shock • Chest pain • Respiratory distress • Apprehension • Orthopnea	• Myocardial infarction • Congestive heart failure • Pulmonary embolus • Pericardial tamponade • Pleural effusion • Pneumonia • Asthma • Anaphylaxis • Aspiration • COPD • Toxic Exposure

Universal Patient Care Protocol U-01

B | Consider **CPAP up to 10** with rales/ronchi indicating wet lung sounds (CP-18) | B

B | **Patient Assist NTG 0.4 mg SL** q 5min if SBP ≥ 100 | B

I | **NTG 0.4 mg SL** q 5min if SBP ≥100 mmHg & **NTG paste 1"** to Chest Wall | I

P | **12 Lead ECG** | P

If acute Ischemic Changes with ST Elevation: declare a STEMI Alert and expedite transport to appropriate STEMI Center.
Transmit 12 Lead ASAP

Consider **Hypotension Protocol M-11** if SBP < 90 mmHg

IF SYMPTOMS PERSIST

P | **Enalaprilant (Vasotec) 1.25 mg** IV if SBP ≥ 140 mmHg | P

M | **Contact Destination or Medical Control** | M

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

- Pearls:
- Avoid Nitroglycerin in any patient who has used Viagra or Levitra in the past 24 hours or Cialis in the past 48 hours due to possible severe hypotension.
- Do not administer Vasotec to patients who are pregnant or may be pregnant.
- Careful monitoring of level of consciousness, BP, and respiratory status with above interventions is essential.
- Consider myocardial infarction in all these patients. If suspected give ASA.
- Allow the patient to be in their position of comfort to maximize their breathing effort.

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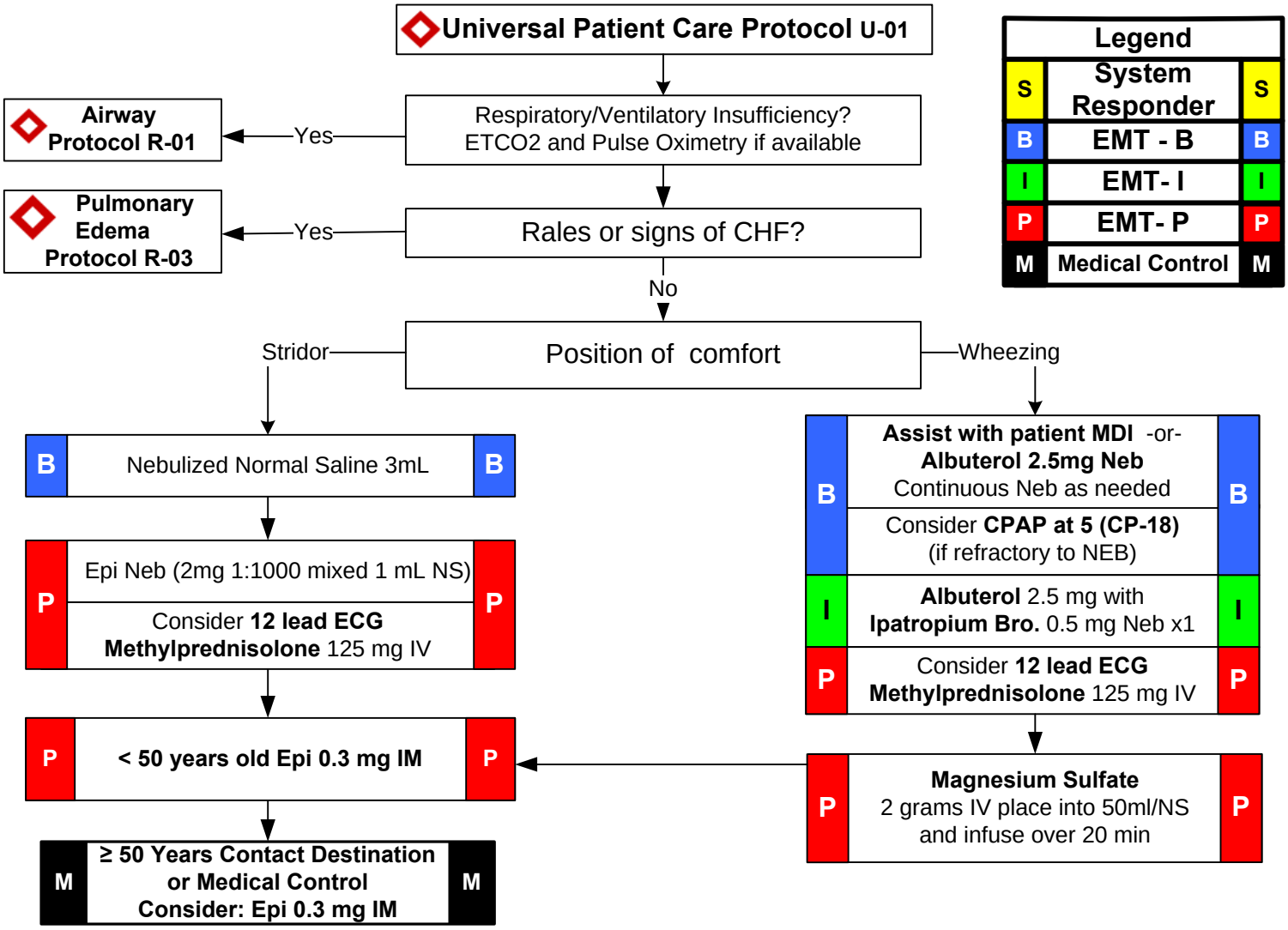
Respiratory Distress

History:	Signs & Symptoms:	Differential:
• Asthma, COPD, CHF, Stroke • Home treatment (oxygen, nebulizer) • Medications compliance (theophylline, steroids, inhalers) • Toxic exposure, smoke inhalation. • Occupation • Travel	• Shortness of breath • Pursed lip breathing • Decreased ability to speak • Increased respiratory rate and effort • Wheezing, rhonchi, rales, stridor • Use of accessory muscles • Fever, cough • Tachycardia	• Asthma/COPD (Emphysema, Bronchitis) • Anaphylaxis • Aspiration • Pleural effusion • Pneumonia • Pulmonary embolus • Pneumothorax • Cardiac (MI or CHF) • Pericardial tamponade • Hyperventilation • Inhaled toxin (Carbon monoxide, etc.)



Pearls:

- **ETCO2 & Pulse Oximetry** must be monitored continuously if initial saturation is less than 95%, or there is a decline in patient's status despite normal pulse oximetry readings.
- Consider contacting Medical Control if patient is refractory to therapy.
- A silent chest in respiratory distress is a pre-respiratory arrest sign.
- Chronic COPD may have elevated CO_2 at baseline. Utilize assessment to determine worsening / impairment.

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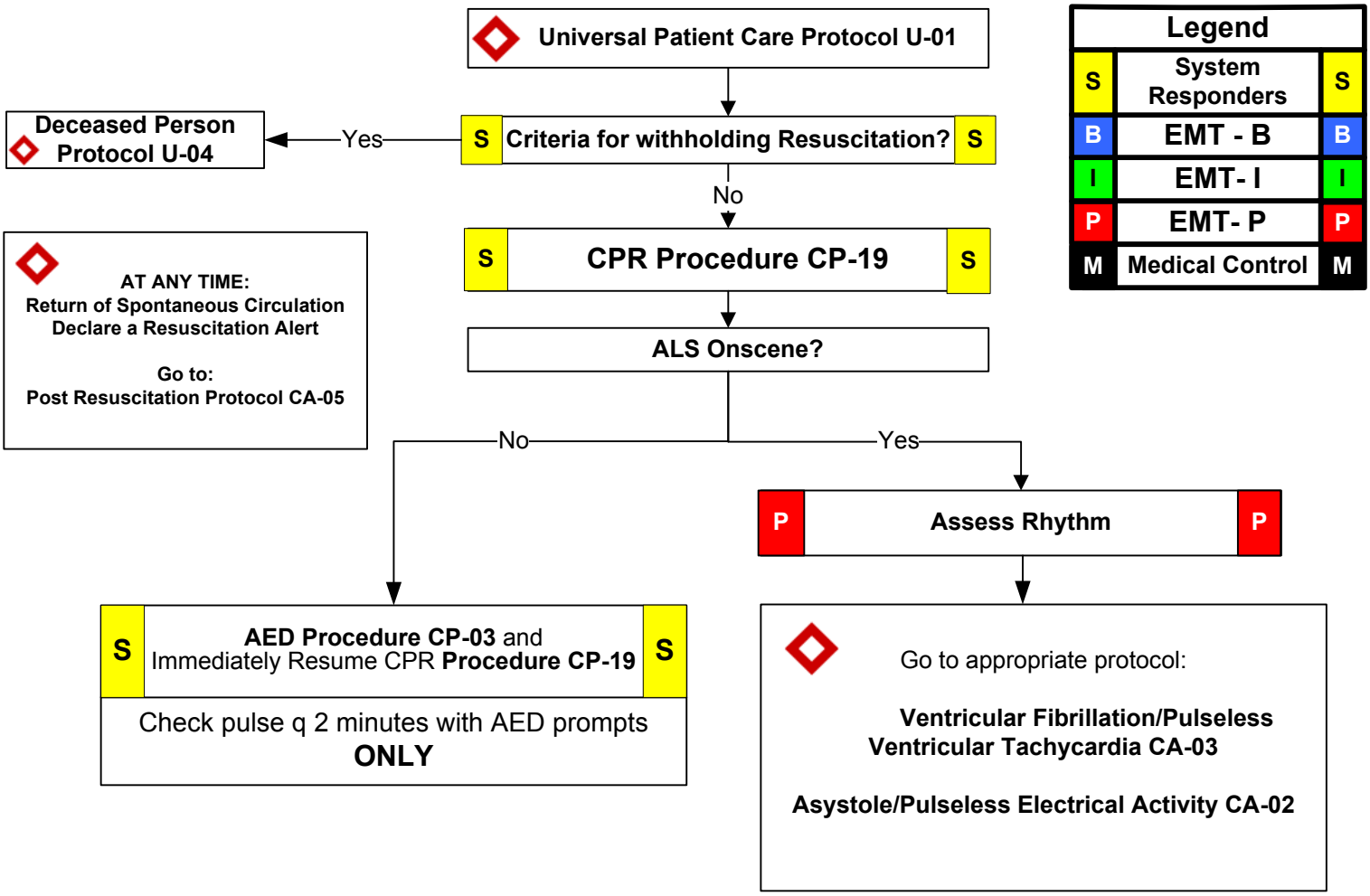
Cardiac Arrest

History:	Signs and Symptoms:	Differential:
• Events leading to arrest • Estimated downtime • Past medical history • Medications • DNR/Hospice • Bystander CPR • AED use	• Unresponsive • Abnormal breathing (gasps) • Pulseless • Lividity or rigor	• Medical vs. Trauma • VF • Pulseless VT • Asystole • PEA • Profound Hypotension



Pearls:
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.
- Reassess airway frequently and after every patient move.
- Immediate and Adequate compressions with timely defibrillation are the keys to success.
- Do not interrupt compressions for airway placement, ventilation, medication administration.
- Perform Cardiac Arrest Checklist during resuscitation.

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Asystole/PEA

History:	Signs and Symptoms:	Differential:
• Past medical history • Medications • Events leading to arrest • End stage renal disease • Estimated downtime • Suspected hypothermia • Suspected overdose • DNR	• Pulseless • Abnormal Breathing (gasps) • No electrical activity on ECG • No auscultated heart tones	• Medical or Trauma • Hypoxia • Potassium (hyper/hypo) • Drug overdose • Acidosis • Hypothermia • Equipment settings/ problems • Obvious Death

Cardiac Arrest Protocol CA-01

S **CPR Procedure CP-19** S

Check rhythm and pulse q 2 minutes

P **Epinephrine**
1 mg 1:10,000 IV/IO q 4 minutes P

Asystole?

YES → **Look for treatable causes:**

Hypoxia
Hypothermia
Hypovolemia
N/S 1L bolus IV/IO
Hypoglycemia
Dextrose Infusion
D10W Premixed 250mL Bag,
Titrate to patient condition and response.
Acidosis
Sodium Bicarbonate 1meq/kg IV/IO **(CR-35)**
Hyperkalemia
Calcium Chloride 1g IV/IO
Sodium Bicarbonate 1meq/kg IV/IO **(CR-35)**
OD Calcium Channel/Beta Blocker
Calcium Chloride 1g IV/IO
Glucagon 3mg IV/IO
Tension Pneumothorax
Chest Decompression

NO

Narrow PEA
QRS ≤ 0.12 sec.

I **N/S 1L bolus IV/IO**
May repeat x1 I

Consider Mechanical Causes:
- Cardiac Tamponade
- Tension Pneumothorax
- Mechanical Hyperinflation
- Pulmonary Embolism
- Hypovolemia

Wide PEA
QRS > 0.12 sec.

P **Sodium Bicarbonate**
1meq/kg IV/IO (CR-35) P

Consider Metabolic Causes:
- Severe Hyperkalemia
- Acidosis
- OD Calcium Channel/Beta Blocker
- Acute MI Pump Failure

ROSC?

No → **Consider Criteria for Discontinuation CS-08**

Yes → **Post Resuscitation Protocol CA-05**

M **Contact On Call**
System Medical Director as needed M

Legend

S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

AT ANY TIME
Change in Rhythm go to Appropriate Protocol

Pearls:
- Always confirm asystole in more than one lead.
- Correctable causes must be considered and addressed.

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Ventricular Fibrillation & Pulseless Ventricular Tachycardia

History:	Signs and Symptoms:	Differential:
• Estimated Down Time • Past Medical History • Medications • Events leading to arrest • Renal Failure / Dialysis • DNR	• Unresponsive, Apneic, Pulseless • Ventricular fibrillation or ventricular tachycardia on ECG	• Asystole • Artifact / Device Failure • Cardiac • Endocrine / Medicine • Drugs • Pulmonary

Cardiac Arrest Protocol CA - 01

↓

S — **Defibrillation Procedure q2 minutes:** AED or Max. Energy Setting for manual device. Immediately Resume CPR Procedure CP-19 — **S**

Check rhythm and pulse q 2 minutes ONLY

↓

P — **Epinephrine 1:10,000 1mg IV/IO** Repeat q 4 minutes — **P**

Amiodarone 300mg IV/IO push Repeat in 4 min at 150 mg IV/IO push x 1

↓

Refractory to ≥ 5 shocks, Administered 450mg Amiodarone, and V-fib/tach **NEVER** converted?

Yes → **Persistent V-Fib/Tach Protocol CA – 06**

No ↓

P — **Lidocaine** 1.5 mg/kg IV/IO every 4 minutes until Max dose = 3mg/kg (CR-35) — **P**

Consider :
Magnesium Sulfate 2 grams slow IV/IO push
Calcium Chloride 1 gram IV/IO
Sodium Bicarbonate 1 meq/kg IV/IO (CR-35)

If hyperkalemic arrest suspected consider early use of Calcium and Sodium Bicarbonate

↓

ROSC?

Yes → **Post Resuscitation Protocol CA - 05**

No ↓

M — **ON Call System Medical Director** — **M**

AT ANY TIME Change in Rhythm go to Appropriate Protocol. (If Persistant V-Fib/Tach reoccurs return to Protocol CA – 06)

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

- ECAs, EMT-Basics and EMT-Intermediates may only use automated defibrillation (AED).
- Reassess and document ETT/BIAD placement after every move and at transfer of patient care.
- Continuous ETCO2 should be initiated as soon as practicable.
- Calcium and sodium bicarbonate should be given early if hyperkalemia is suspected (renal failure, dialysis)
- Tx priorities: uninterrupted compressions, defibrillation, then IV/IO and airway control.
- Polymorphic VT (Torsades) may benefit from magnesium sulfate.
- Effective CPR and prompt defibrillation are the keys to successful resuscitation.
- Magnesium Sulfate slow push is over 5 minutes
- **If Lidocaine converts: contact OLMC for additional bolus doses of 1.5 mg/kg IV.**

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Induced Hypothermia

History:	Signs and Symptoms:	Differential:
• Non-Traumatic Cardiac Arrest	• Return of pulse	• Continue to address specific differentials associated with original dysrhythmia

Return Of Spontanous Circulation (ROSC)

↓

Criteria for Induced Hypothermia (see Pearls)? ← No → **Post Resuscitation Protocol CA-05**

↓ Yes

Complete Induced Hypothermia Checklist CR-14

↓

S	Expose patient Apply Ice Packs to Axilla, Neck & Groin	S
P	**Sedation:** Midazolam: 2.5 – 5.0 mg IV/IO **OR** 5 mg IM/IN May repeat PRN max total dose 10 mg with SBP > 100 mmHg	P
	Vecuronium 0.1 IV/IO mg/kg to max of 10 mg (with Advanced Airway only) (CR-35)	
	Cold Saline Bolus 30 mL/kg to max of 2 liters	
	Perform 12 Lead ECG **Activate STEMI Alert & Transmit 12 Lead PRN**	
	Norepinephrine (Levophed) CR-03 **2-12 mcg/min** IV Infusion titrated to MAP ≥ 65	

↓

M	**Early Notification to Resuscitation Center**	M

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

◇ **AT ANY TIME Loss of Spontaneous Circulation: go to appropriate protocol**

Pearls:

Criteria for Induced Hypothermia:
- ROSC after cardiac arrest not related to trauma or hemorrhage.
- Weight ≥ 37 Kg
- Initial temperature > 34C (93.2 F)
- Patient unable to follow commands

- If patient meets other criteria for induced hypothermia and does not have advanced airway, immediately provide cooling.
- If patient is hypotensive do not administer sedative/paralytic. Initiate volume replacement with cold saline.
- When exposing patient for purpose of cooling undergarments may remain in place to preserve the patient's modesty.
- Reassess airway frequently and with every patient move.
- Patients develop metabolic alkalosis with cooling. Do not hyperventilate.
- These patients should only be transported to Resuscitation Centers of Excellence.
- Notify destination ASAP when this protocol is utilized so that the receiving unit can prepare to receive patient.
- Cold Saline should be infused @ 100ml/min.
- **If Vecuronium is used for patient care for Induced Hypothermia then Midazolam MUST also be used. If Midazolam is contraindicated then do not administer Vecuronium.**

OFFICE OF THE MEDICAL DIRECTOR
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Post Resuscitation

History:	Signs & Symptoms:	Differential:
• Respiratory Arrest • Cardiac Arrest	• Return of pulse	• Continue to address specific differentials associated with original dysrhythmia

Repeat Primary Assessment
and **remove ITD** if not done already. If using LUCAS Device: **release and retract Compression Pad**

Is patient a candidate for induced hypothermia?

Yes → **Induced Hypothermia Protocol CA-04**

No →

S | **Continue ventilatory support**
- SaO2 >94% but<100%
- ETCO2 >20
- Resp Rate < 12

DO NOT HYPERVENTILATE | S

Airway Protocol R-01

P | **Cardiac Monitor & 12 Lead** | P

Hypotensive → **Hypotension Protocol M-11**

Significant Ectopy → **Wide Complex Tachycardia Protocol C-05**

Bradycardia → **Bradycardia Protocol C-02**

If arrest reoccurs, revert to appropriate **Protocol** and/or initial successful treatment

M | **Notify Destination or Contact Medical Control** | M

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Declare a "Resuscitation Alert" at time of patient movement

Pearls:

- Hyperventilation is a significant cause of hypotension and cardiac arrest in the post resuscitation phase and it must be avoided.
- Most patients immediately post resuscitation will require ventilatory assistance. Oxygen should be titrated to SaO2 of >94 but <100%.
- The condition of post-resuscitation patients fluctuates rapidly and continuously, and they require close monitoring. Appropriate postresuscitation management can best be planned in consultation with medical control.
- Common causes of post-resuscitation hypotension include hyperventilation, hypovolemia, pneumothorax, and medication reaction to ALS drugs.
- Significant ectopy is defined as a dysrhythmia that meets treatment criteria as part of another protocol.

These patients must be stabilized prior to moving and should only be transported to Resuscitation Centers of Excellence.

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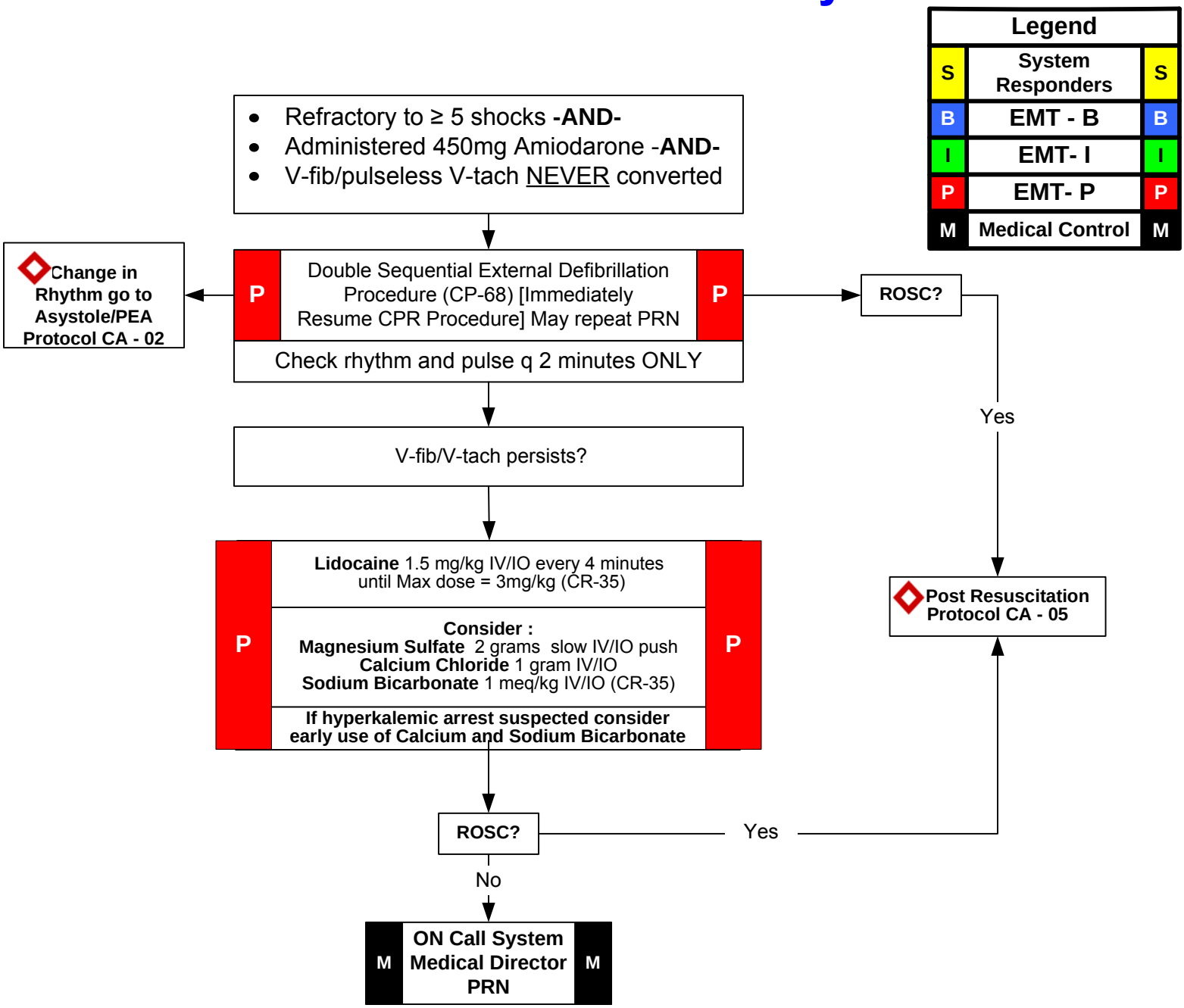
Persistent Ventricular Fibrillation & Pulseless Ventricular Tachycardia



Pearls:

- Continuous ETCO2 should be initiated as soon as practicable.
- Calcium and sodium bicarbonate should be given early if hyperkalemia is suspected (renal failure, dialysis)
- Tx priorities: uninterrupted compressions, defibrillation, then IV/IO and airway control.
- Polymorphic VT (Torsades) may benefit from Magnesium Sulfate. Slow push is over 5 minutes
- Effective CPR and prompt defibrillation are the keys to successful resuscitation.
- Prior to double sequential external shocks providers should verify that defibrillation pads are well-adhered to the patient and that they do not touch.
- Prolonged cardiac arrests may lead to tired providers and decreased compression quality. Ensure compressor rotation, summon additional resources as needed, and ensure provider rest and rehab during and post-event.
- Continue to use **primary monitor** for all event recording and data capture.
- Primary monitor **ONLY** is uploaded into e-pcr.
- Once criteria for DSED are met subsequent shocks should be delivered as DSED
- **If Lidocaine converts: contact OLMC for additional bolus doses of 1.5 mg/kg IV.**

OFFICE OF THE MEDICAL DIRECTOR
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Chest Pain, Suspected Acute Coronary Syndrome

History:
- Take: **Viagra, Levitra, Cialis**
- Past medical history (MI, Hypertension, Hyperlipidemia, Angina, Diabetes, Post Menopausal)
- Family HX cardiovascular disease < 55 years old
- Chest Pain with exertion
- Smoker
- Stimulants

Signs & Symptoms:
- Pain or pressure between navel and jaw
- "Heart racing", "palpitations", or "heart too slow"
- CHF signs and symptoms
- Syncope
- Severe Weakness if > 45 years old
- Difficulty breathing (no obvious respiratory cause)

Differential:
- Angina vs. Myocardial infarction Pericarditis
- Pulmonary embolism
- Asthma / COPD
- Pneumothorax
- Aortic dissection
- GI reflux or Hiatal hernia
- Esophageal spasm
- Chest wall injury or pain
- Pleuritic pain
- Overdose (Cocaine)

If the patient meets any Rapid 12 lead criteria (CR-34): EMT providers attach ECG electrodes ASAP and ALS providers are to obtain a 12 lead ECG within 5 minutes of ALS patient contact.

Universal Patient Care Protocol U-01

S	**Aspirin** 324 mg PO X1	S
	Oxygen Titrate to SaO2 >94% but <100%	
B	**Apply 12 Lead ECG electrodes if trained and equipped Procedure CP-01**	B
P	**12 Lead ECG within 5 min. of Pt. contact**	P
B	**Patient Assist NTG SL 0.4 mg** q 5min if SBP ≥ 100 until patient is pain free	B
I	**NTG SL 0.4 mg** q 5min until pain free & apply **NTG paste 1"** Hold all nitrates if SBP < 100	I
P	Inferior wall MI consider: **Normal Saline 250- 500 mL** May repeat x 1.	P
P	**Fentanyl: 1 mcg/kg** IV/IM/IN up to 100 mcg may repeat 25 mcg q 10 min (Max total 300 mcg) SBP > 100mmHg **OR** Clinical Reference CR – 35. As needed until improvement.	P
M	**Contact System Medical Director or Destination as needed**	M

STEMI

Declare a "STEMI Alert", < 15 minute on-scene time and initiate transport to appropriate STEMI Center
Transmit 12 Lead ASAP
Clinical Standard CS-33
Appendix A-02

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Patient may develop:
Hypotension
Dysrhythmia
N/V

Treat per appropriate protocol

Pearls:
- Do not administer Nitroglycerin in any patient who has used Viagra (sildenafil) or Levitra (vardenafil) in the past 24 hours or Cialis (tadalafil) in the past 48 hours due to potential severe hypotension.
- Refer to STEMI Alert or ACS Consultation Criterion listed in Clinical Standard CS – 33.
- If patient has ECG changes, or is going directly to cardiac cath lab, attempt to establish a second IV but do NOT delay transport.
- Monitor for hypotension and respiratory depression after administration of nitroglycerin and fentanyl.
- Diabetics and geriatric patients often have atypical pain, or only generalized complaints.
- Hypersympathetic state from stimulant abuse usually presents with sustained HR >120 bpm and HTN. If chest pain occurs in setting of stimulants utilize benzodiazepine per Overdose/Toxic Ingestion Protocol in addition to above.
- ETCO2 if multiple doses of Narcotic Medication administered

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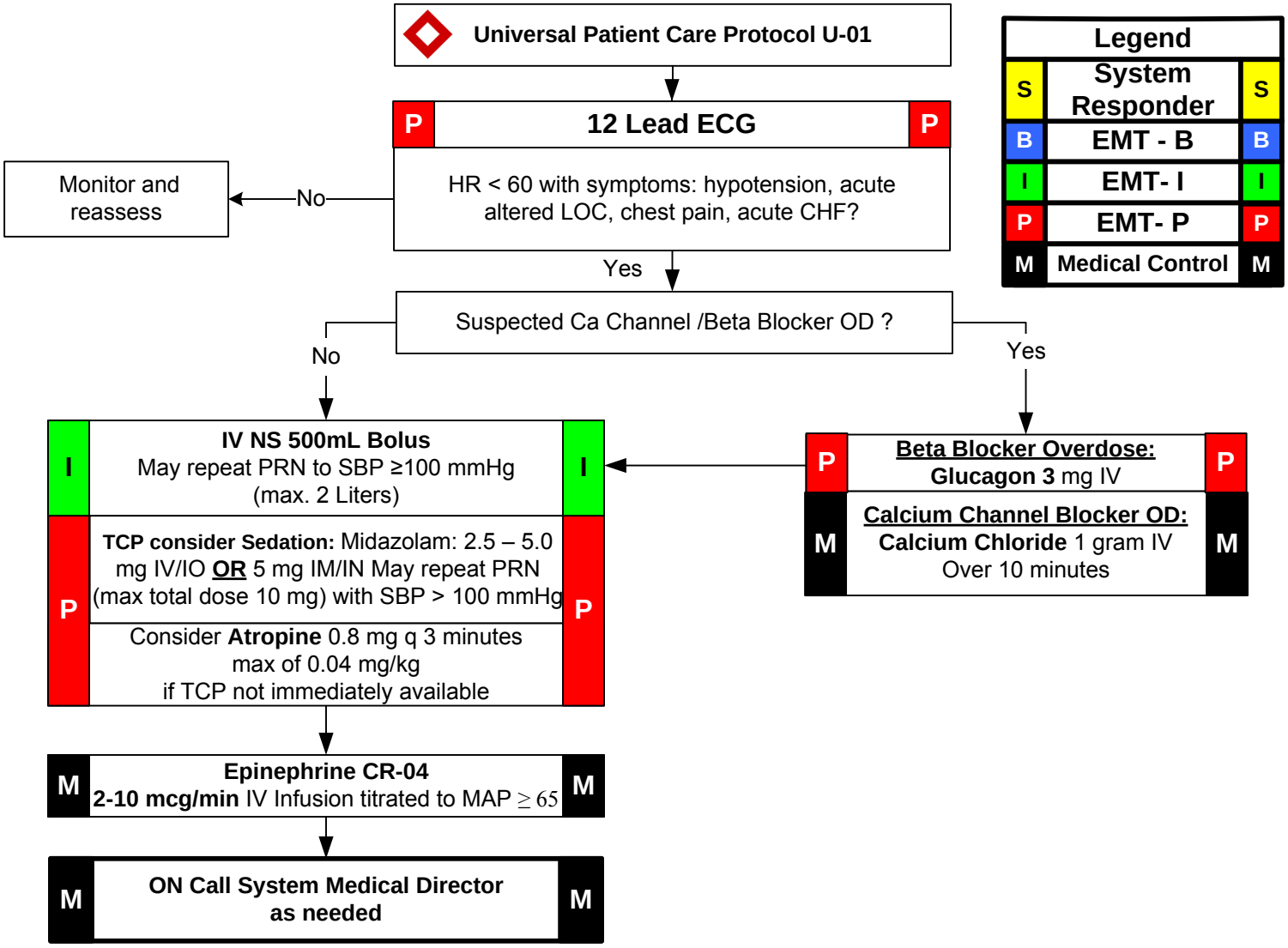
Bradycardia

History:	Signs & Symptoms:	Differential:
• Past Medical History • Medications ⇨Beta Blockers ⇨Calcium Channel Blockers ⇨Digoxin ⇨Cholineregics ⇨Clonidine • Pacemaker • Events prior to onset	HR <60/min with signs of hypoperfusion • Hypotension • Acute altered LOC • Chest pain • CHF • Syncope	• Acute MI/Ischemia • Hypoxia • Pacemaker Failure • Hypothermia • Sinus Bradycardia • Electrolyte Abnormality (K+) • CVA, increased ICP, Head Injury • Sick Sinus Syndrome • AV Blocks • OD



Pearls:

- The use of lidocaine in heart block can worsen bradycardia and lead to asystole and death.
- **Treatment of bradycardia is based on the presence of symptoms. If asymptomatic, monitor only.**
- The use of Atropine for bradycardia in the presence of an MI may worsen ischemia.
- Consider treatable causes for bradycardia (Beta blocker OD, Calcium channel blocker OD, etc.) - treat appropriately
- Assure patient is adequately oxygenated.
- **If wide complex bradycardia consider hyperkalemia.**
- IV Glucagon = Emesis

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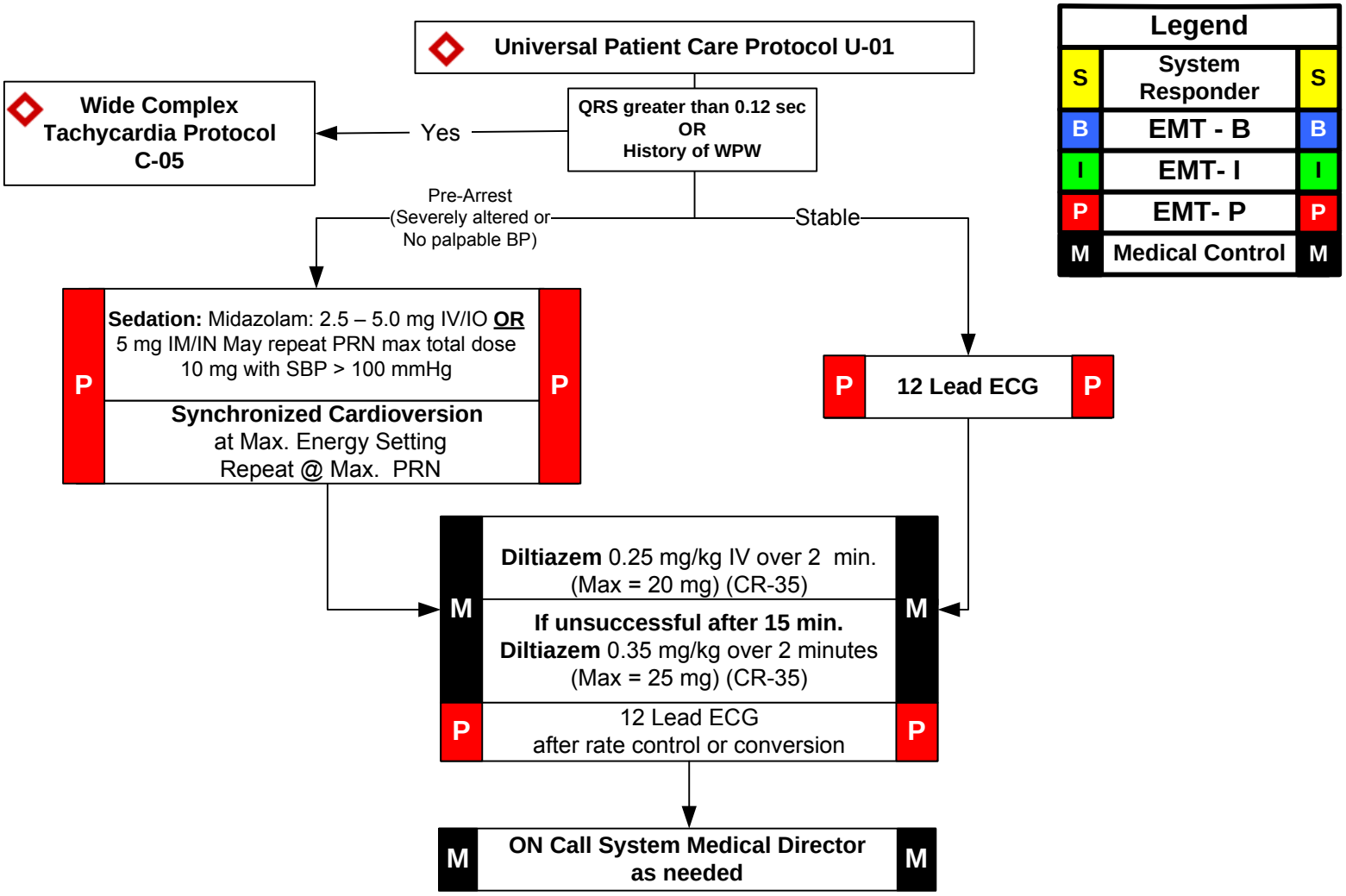
Atrial Fibrillation with Rapid Ventricular Response

History:	Signs and Symptoms:	Differential:
• Medications (Aminophylline, Stimulants, Thyroid supplements, Decongestants, Digoxin) • Diet (caffeine, chocolate) • Drugs (nicotine, cocaine) • Past medical HX (A-fib, COPD, CAD)	• QRS less than 0.12 sec • Rate related (Dizziness, CP, SOB Syncope / near syncope)	• Heart disease (WPW, Valvular) • Sick sinus syndrome • Myocardial infarction • Electrolyte imbalance • Exertion, Pain, Emotional stress • Fever • Hypoxia or Anemia • Hypovolemia • Drug effect / Overdose (see Hx) • Hyperthyroidism • Pulmonary embolus



Pearls:

- **If patient has history of or 12 Lead ECG reveals Wolfe Parkinson White (WPW), DO NOT administer Diltiazem.**
- Adenosine may not be effective in identifiable atrial flutter/fibrillation, but is not harmful.
- Monitor for hypotension after administration of Diltiazem.
- Monitor for respiratory depression and hypotension associated with Midazolam.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.
- Continuous pulse oximetry is required for all Atrial Fibrillation Patients.
- Maximum Physiologic HR calculation 220 minus (-) age in years = Max HR
- Rapid ventricular response is defined as rate > 100 however rate related signs and symptoms are uncommon with HR ≤ 150/min in patients with healthy heart. Consider rate control at lower heart rates if symptomatic, .

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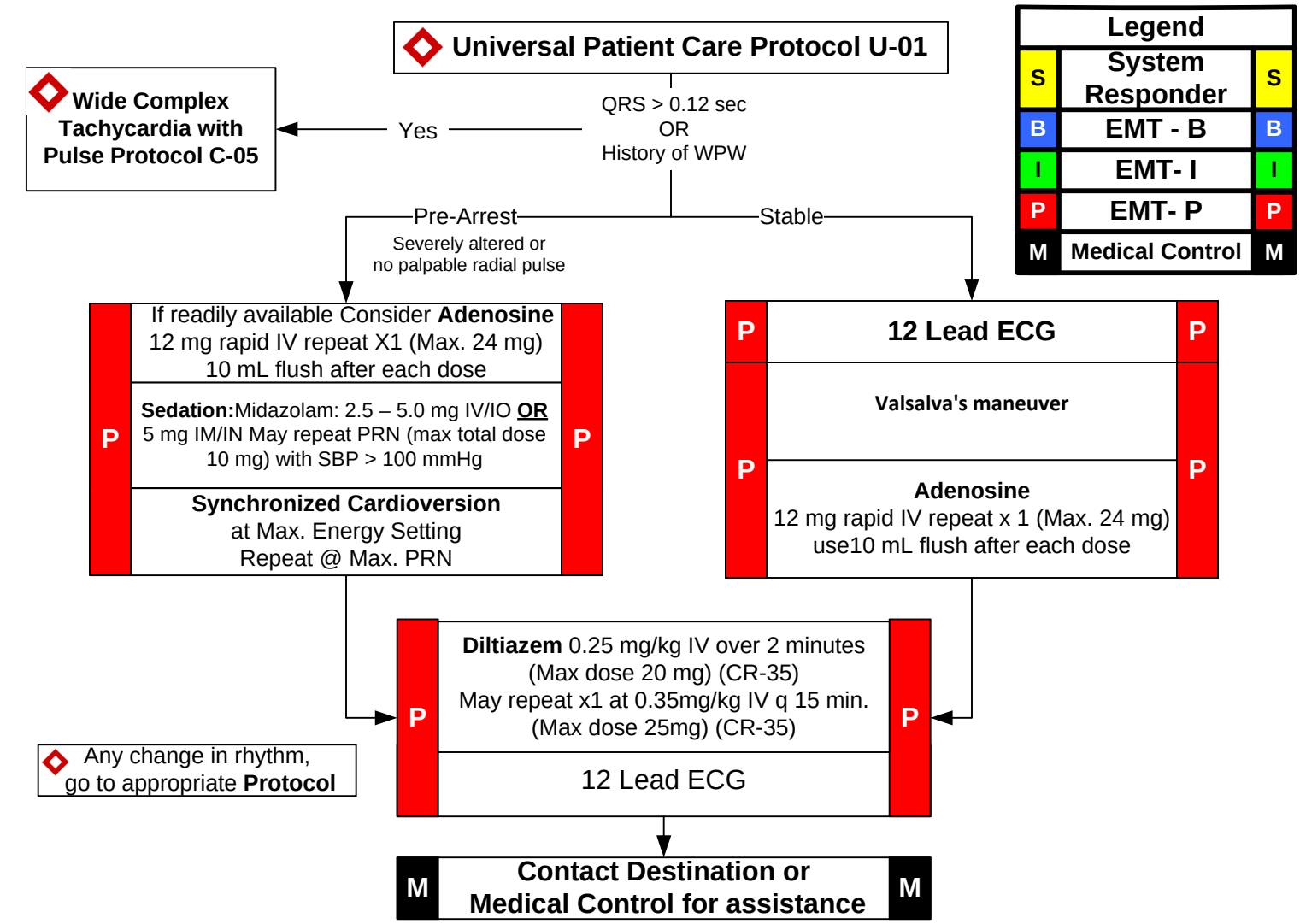
Supraventricular Tachycardia

History:	Signs and Symptoms:	Differential:
• Medications (Aminophylline, Diet pills, Thyroid supplements, Decongestants, Digoxin) • Diet (caffeine, chocolate) • Drugs (nicotine, cocaine) • Past medical history • History of palpitations / heart racing • Syncope / near syncope	• **QRS less than 0.12 Sec l** • Rate related (Dizziness, CP, SOB) • Potential presenting rhythm Sinus tachycardia Atrial fibrillation / flutter Multifocal atrial tachycardia	• Heart disease (WPW, Valvular) • Sick sinus syndrome • Myocardial infarction • Electrolyte imbalance • Exertion, Pain, Emotional stress • Fever • Hypoxia • Hypovolemia or Anemia • Drug effect / Overdose (see Hx) • Hyperthyroidism • Pulmonary embolus



Pearls:

- **If patient has history of or 12 Lead ECG reveals Wolff-Parkinson-White (WPW), DO NOT administer Diltiazem, go to VT with Pulse.**
- If patient requires multiple conversion attempts without resolution consider alternative cause of dysrhythmia
- Adenosine may not be effective in identifiable atrial flutter/fibrillation, but is not harmful.
- Monitor for respiratory depression and hypotension associated with Midazolam.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.
- Continuous pulse oximetry is required for all SVT Patients.
- Serious S/S are uncommon with HR < 150. Patients with impaired cardiac function may become symptomatic at lower HR.
- Maximum physiologic heart rate (Sinus Tachycardia) is 220 bpm-age in years.

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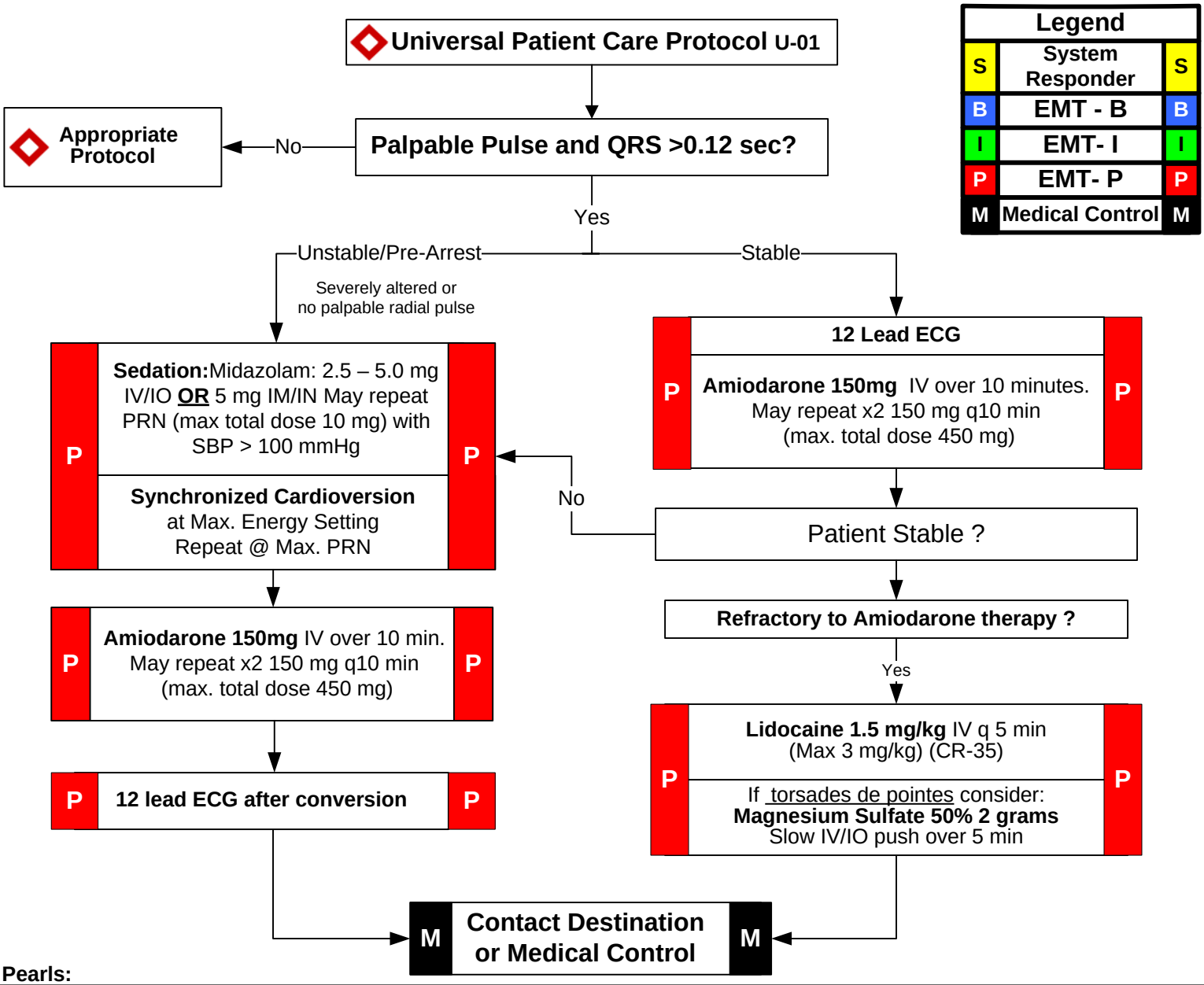
Wide Complex Tachycardia With A Pulse

History:	Signs and Symptoms:	Differential:
• Past medical history / medications, diet, drugs • Syncope / Near syncope • Palpitations • Pacemaker • Allergies: Lidocaine / Novocaine • CAD, CHF, Cardiomyopathy	• Ventricular Tachycardia on ECG (Runs or Sustained) • Conscious, rapid pulse • Chest Pain, Shortness of Breath • Dizziness • Rate usually 150-180 bpm for sustained V-Tach	• Artifact / Device Failure • Cardiac • Endocrine/Electrolyte • Hyperkalemia • Drugs/Toxic exposure • Pulmonary disease



Pearls:

- For witnessed / monitored ventricular tachycardia, try having patient cough
- Slow wide complex consider Hyperkalemia
- **If Lidocaine converts: contact OLMC for additional bolus doses of 1.5 mg/kg IV.**
- Maximum dose of antiarrhythmic should be given before changing antiarrhythmic.
- If hyperkalemia or tricyclic OD consider **Sodium Bicarbonate 1 mEq/kg early in intervention.**
- **Amiodarone: allow 10 minutes after dose completed before next dose.**

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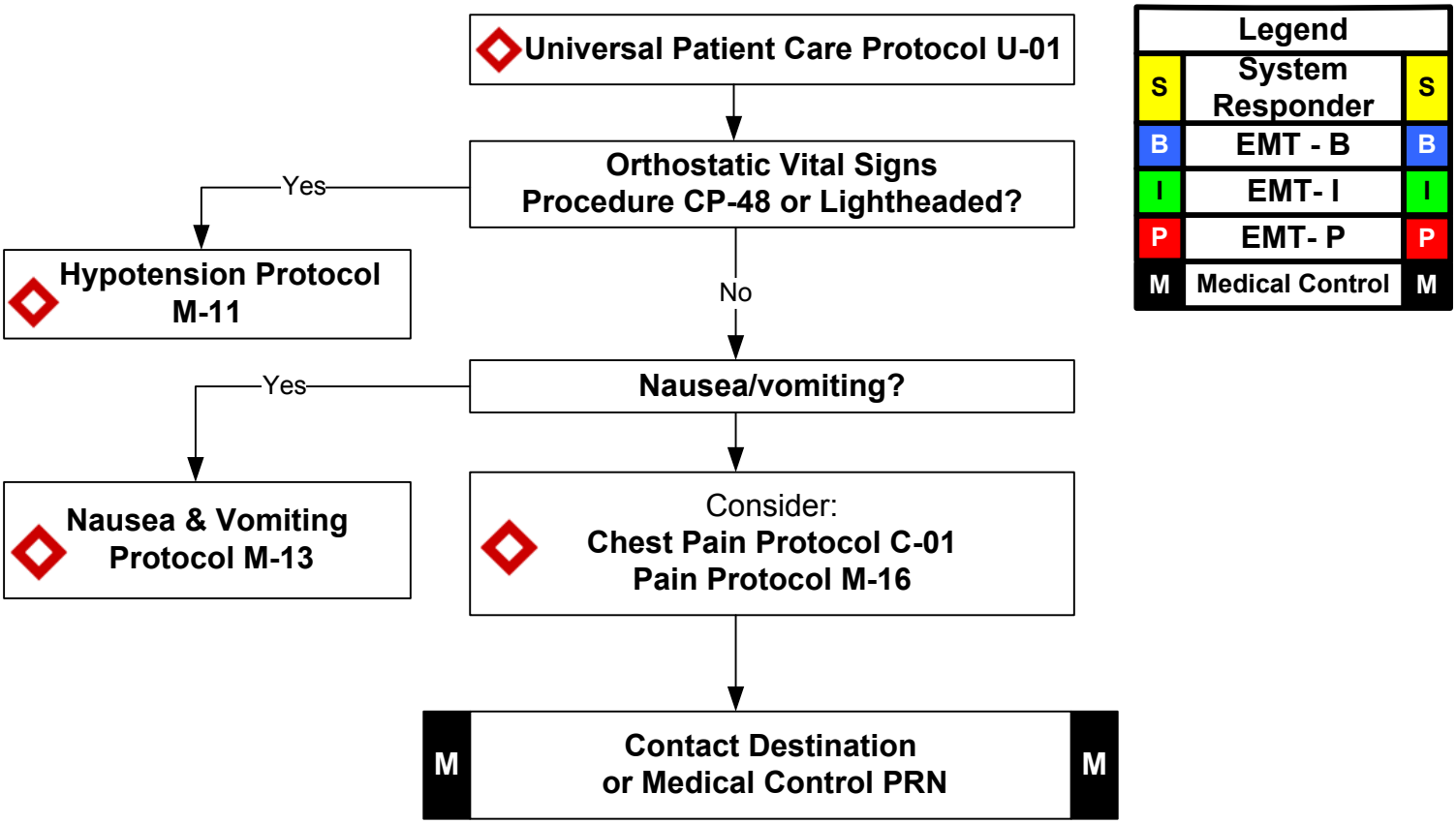
Abdominal Pain

History:	Signs & Symptoms:	Differential:
• Age • LMP/Pregnancy • Past medical / surgical history • Medications • Last meal eaten/type of food • Last bowel movement / emesis	• Pain • Nausea/Vomiting • Diarrhea • Dysuria • Constipation • Vaginal bleeding / discharge • Pregnancy • Fever	• Pneumonia or Pulmonary embolus • Liver (hepatitis, CHF) • Peptic ulcer disease / Gastritis • Gallbladder • Myocardial Infarction • Pancreatitis • Kidney Stone • Abdominal aneurysm • Appendicitis • Bladder / Prostate disorder • Pelvic (PID, Ectopic pregnancy, ovarian cyst) • Mesenteric ischemia • Diverticulitis • Bowel obstruction • Gastroenteritis (infectious)



Pearls:

- Abdominal pain in women of childbearing age should be treated as an ectopic pregnancy until proven otherwise
- The diagnosis of abdominal aneurysm should be considered with abdominal pain in patients over 50 Y/O.
- Orthostatic v/s need not be assessed on obvious Hypotensive patients.
- Mesenteric ischemia presents with severe pain with limited exam findings. Risk factors include age > 60, atrial fibrilation, CHF and atherosclerosis.

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Allergic Reaction

History:	Signs & Symptoms:	Differential:
• Medication history • Onset and location • Past medical history • Past history of reactions • New clothing, soap, detergent • New environment • Medication allergy / exposure • Food allergy / exposure • Insect sting or bite	• Edema / Voice Changes • Itching or hives • Coughing / wheezing or respiratory distress • Chest or throat constriction • Difficulty swallowing • Hypotension or shock	• Urticaria (rash only) • Anaphylaxis (systemic effect) • Shock (vascular effect) • Angioedema (drug induced) • Aspiration / Airway obstruction • Vasovagal event • CHF • Asthma or COPD

Universal Patient Care Protocol U-01

Severe Respiratory Distress and/or Hypotension

B — **Epi 0.3** mg 1:1000 IM **or** Adult EPI Pen — B

Mild to Moderate Distress

B — **Albuterol** 2.5 mg Neb, continuous if needed — B

I — **Diphenhydramine** 50 mg IV/IM — I

I — **Consider NS bolus titrated to perfusion (SBP ≥ 100 mmHg)** — I

P — **Cardiac Monitor** — P

P — **Methylprednisolone** 125 mg IV — P

Continue to reassess airway

Hives/Rash only No Respiratory Distress

I — **Diphenhydramine** 25 mg IV/IM/PO — I

Reassess patient

Continued distress or evidence of shock

B — **Consider CPAP** Max. 5 cm H2O PEEP — B

P — **Epi 0.3** mg 1:1000 IM May repeat q 5 to 10 min. (additional dosing is titrated to the patients continuing response to a severe reaction) **Max total Epi 1.2 mg** — P

M — **Contact Destination or Medical Control** — M

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

- **These patients should receive a 12 lead ECG and should be continuously monitored.**
- **Any patient with respiratory symptoms or extensive reaction should receive IV or IM diphenhydramine.**
- **The shorter the onset from exposure to symptoms, the more severe the reaction.**
- **Cold pack to bite or sting site.**

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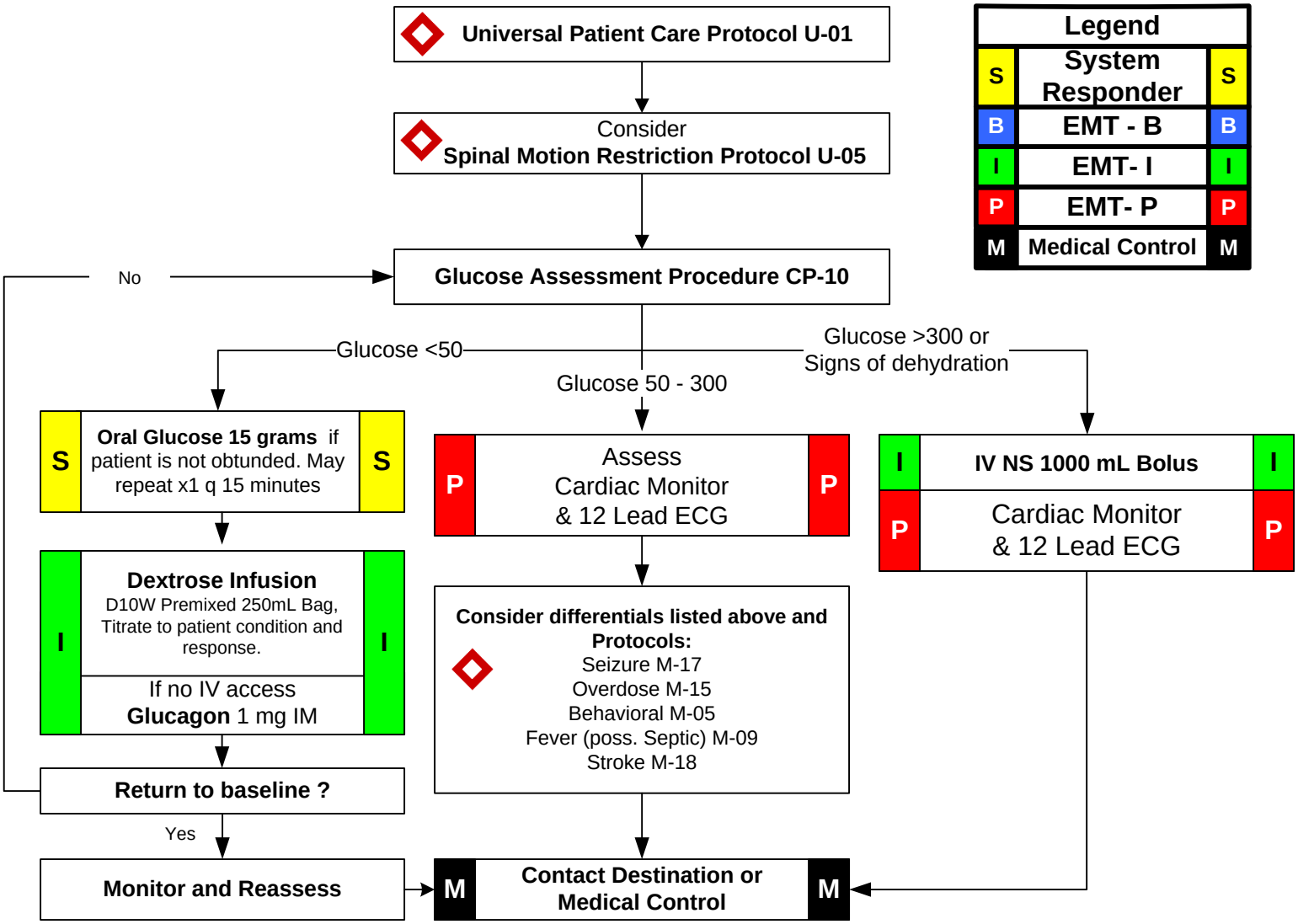
Altered Mental Status

History:	Signs/Symptoms:	Differential:
• Known diabetic, medic alert tag • Drugs, drug paraphernalia • Report of illicit drug use or toxic ingestion • Past medical history • Medications • History of trauma • Change in condition	• Decreased mental status • Change in baseline mental status • Bizarre behavior • Hypoglycemia (cool, diaphoretic skin) • Hyperglycemia (warm, dry skin; fruity breath; Kussmaul resp; signs of dehydration)	• Head trauma • CNS (stroke, tumor, seizure, infection) • Cardiac (MI, CHF) • Infection • Thyroid (hyper / hypo) • Shock (septic, metabolic, traumatic) • Diabetes (hyper / hypoglycemia) • Toxicologic/Carbon Monoxide • Acidosis / Alkalosis • Environmental exposure • Pulmonary (Hypoxia) • Electrolyte abnormality • CO/Cyanide



Pearls:

- Be aware of AMS as presenting sign of an environmental toxin or Haz-Mat exposure and protect personal safety.
- It is safer to assume hypoglycemia than hyperglycemia if doubt exists. Recheck blood glucose after Dextrose or Glucagon.
- Do not let alcohol confuse the clinical picture. Alcoholics frequently develop hypoglycemia.
- Hyperglycemia is treated with fluids. These patients are volume depleted, glucose will begin to clear with adequate hydration.
- Patents on oral hypoglycemics are at risk for repeat episodes of hypoglycemia, monitor closely and encourage transport.
- If hypoglycemic patients have returned to baseline and wish to refuse care make certain that the patient eats and that there is someone to observe them for repeat hypoglycemic episodes.

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Back Pain

History:	Signs & Symptoms:	Differential:
• Age • Past medical history • Past surgical history • Medications • Previous back injury • Traumatic mechanism • Fever • Saddle paresthesia • Back surgery (hardware)	• Pain (paraspinous, spinous process) • Swelling • Pain with range of motion • Extremity weakness • Extremity numbness • Shooting pain into an extremity • Bowel / bladder dysfunction • Unirary retention or incontinence of urine/stool	• Muscle strain • Herniated disc with nerve compression • Sciatica • Spine fracture • Kidney stone • Pyelonephritis (Kidney infection) • Aneurysm/Thoracic Dissection • Pneumonia • ACS • Cauda equina • Epidural abscess • Pancreatitus

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Universal Patient Care Protocol U-01

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Injury or traumatic mechanism consider **Spinal Motion Restriction Protocol U-05**

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I — **Consider IV NS 500mL Bolus if hypotensive or shock**
May repeat PRN
to SBP ≥ 100 mmHg (max. 2 Liters) — I

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Pain Control Protocol M-16

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M — **Contact Destination or Medical Control** — M

Pearls:
- Abdominal aneurysms may present as back pain and are a concern in patients over the age of 50
- Any new bowel or bladder incontinence is a significant finding which requires immediate medical evaluation
- In patient with history of IV drug abuse or pain management injections a spinal epidural abscess should be considered.

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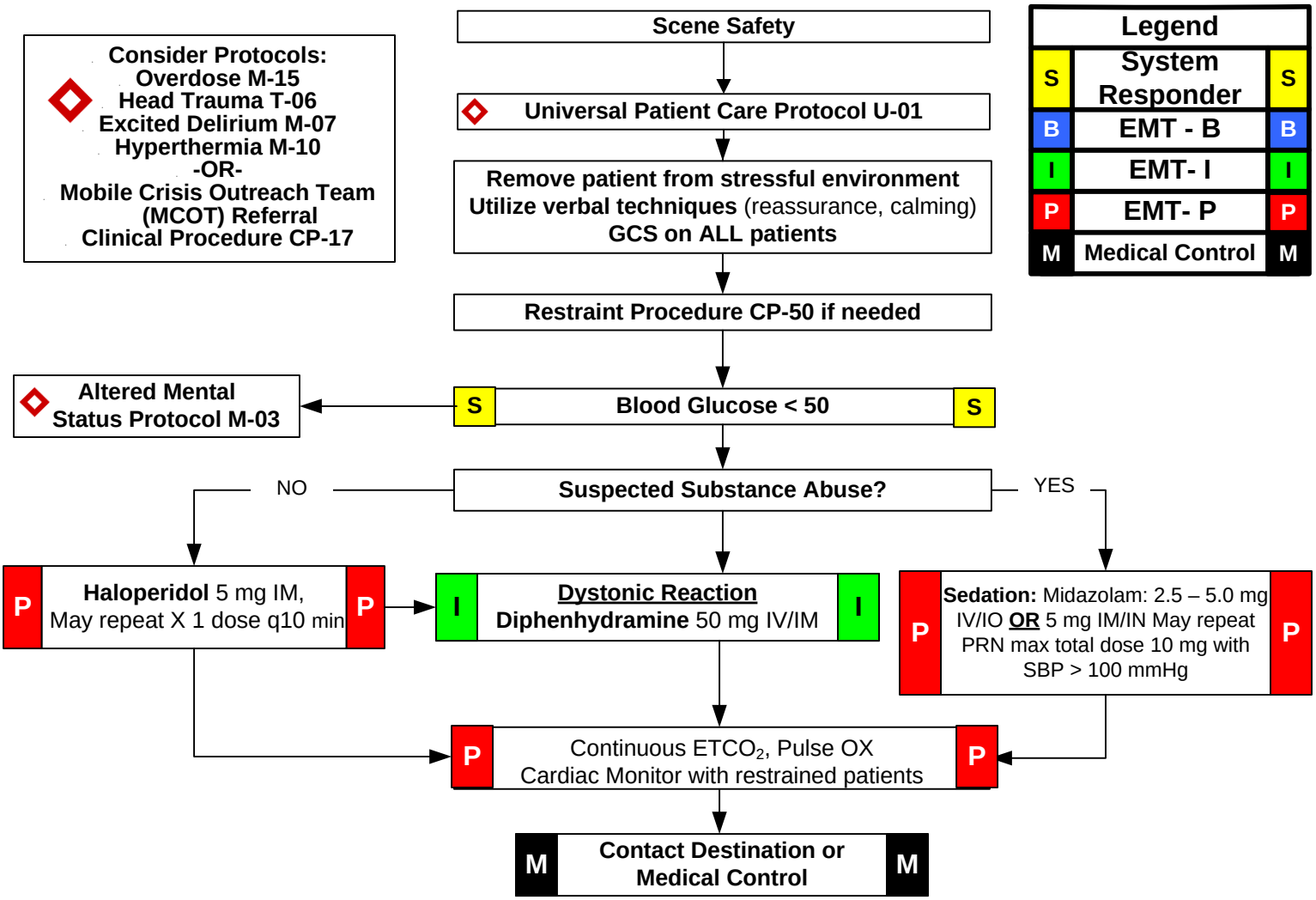
Behavioral

History:	Signs & Symptoms:	Differential:
• Situational crisis • Psychiatric illness/medications • Injury to self or threats to others • Medic alert tag • Substance abuse / overdose • Diabetes • Past medical/Family	• Anxiety, agitation, confusion • Affect change, hallucinations • Delusional thoughts, bizarre behavior • Combative violent • Expression of suicidal/homicidal thoughts	• Altered Mental Status differential • Hypoxia • Alcohol Intoxication • Toxin / Substance abuse • Medication effect / overdose • Withdrawal syndromes • Depression • Bipolar (manic-depressive) • Schizophrenia, anxiety disorders, etc



Pearls:

- **Consider your safety first. Physical restraint should be preformed/assisted by Law Enforcement when available.**
- Be sure to consider all possible medical/trauma causes for behavior (hypoglycemia, overdose, substance abuse, hypoxia, head injury, etc.)
- If patient is suspected of agitated delirium suffers cardiac arrest, consider a fluid bolus and sodium bicarbonate early.
- Do not overlook the possibility of associated domestic violence or child abuse.
- **All patients who receive either physical or chemical restraint must be continuously observed by ALS personnel on scene or immediately upon their arrival. If possible and when safe to do so apply ECG, ETCO2, Pulse Ox, Blood Glucose.**
- Any transported patient who is handcuffed or restrained by Law Enforcement should be accompanied by an officer whenever possible. If not possible law enforcement must be immediately available.
- Restrained patients should never be maintained or transported in a prone position.

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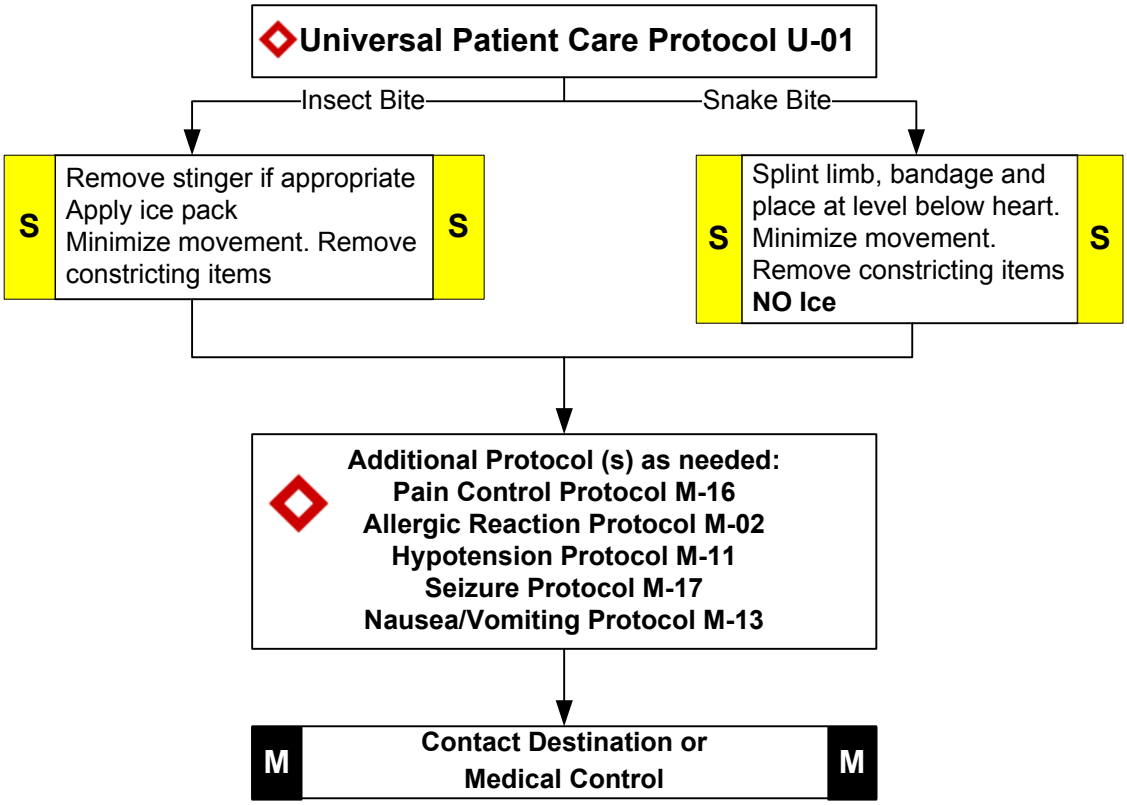
Bites and Envenomations

History:	Signs and Symptoms:	Differential:
• Type of bite / sting • Description / photo with patient for identification of animal involved • Time, location, size of bite / sting • Previous reaction to bite / sting • Domestic vs. Wild • Tetanus and Rabies risk • Immunocompromised patient	• Rash, skin break, wound • Pain, soft tissue swelling, redness • Blood oozing from the bite wound • Evidence of infection • Shortness of breath, wheezing • Allergic reaction, hives, itching • Hypotension or shock	• Animal bite • Human bite • Snake bite (poisonous) • Spider bite (poisonous) • Insect sting / bite (bee, wasp, ant, tick) • Infection risk • Rabies risk • Tetanus risk



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

- Human bites have a very high risk of infection due to oral bacteria.
- Carnivore bites are much more likely to become infected and all have risk of Rabies exposure.
- Cat bites may rapidly progress to infection due to a specific bacteria (Pasteurella multocida).
- Venomous snakes in this area are generally of the pit viper family: rattlesnake, copperhead, and water moccasin.
  - -- Coral snake bites are rare: Very little pain but very toxic. "Red on yellow - kill a fellow, red on black - venom lack."
  - -- It is **NOT** necessary to take the snake to the ED with the patient.
- Black Widow spider bites have minimal pain initially but may develop muscular pain and severe abdominal pain (spider is black with red hourglass on belly).
- Brown Recluse spider bites are minimally painful to painless. Little reaction is noted initially but tissue necrosis at the site of the bite develops over the next few days (brown spider with fiddle shape on back). OK to use ice pack for this bite.
- Evidence of infection: swelling, redness, drainage, fever, red streaks proximal to wound.
- Immunocompromised patients are at an increased risk for infection.(diabetes, chemotherapy, transplant patients)
- May use soap and water to clean wounds if time and patient condition allows.
- Consider contacting the US/Texas Poison Control Center for guidance. 1-800-222-1222

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Excited Delirium

History:	Signs & Symptoms:	Differential:
• Situational crisis • Psychiatric illness/medications • Injury to self or threats to others • Medic alert tag • Substance abuse / overdose • Diabetes	• Anxiety, agitation, confusion • Affect change, hallucinations • Delusional thoughts, bizarre behavior • Combative violent • Expression of suicidal/homicidal thoughts • Very "hot" to touch	• see Altered Mental Status differential • Hypoxia • Alcohol Intoxication • Toxin / Substance abuse • Medication effect / overdose • Withdrawal syndromes • Bipolar (manic-depressive) • Schizophrenia, anxiety disorders, etc

Additional **Protocols** as needed:

- **Altered Mental Status M-03**
- **Overdose M-15**
- **Head Trauma T-06**
- **Cardiac Arrest CA-01**

Scene Safety

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◆ **Universal Patient Care Protocol U-01**

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Restraint Procedure CP-50

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P	**Sedation:** Midazolam: 2.5 – 5.0 mg IV/IO **OR** 5 mg IM/IN May repeat PRN max total dose 10 mg with SBP > 100 mmHg	P
P	Continuous $ETCO_2$, Pulse OX, Cardiac Monitor and Document	P
S	**Temperature > 101: Initiate cooling measures**	S
I	**Normal Saline** 1000 ml bolus May repeat (Max 2 Liters)	I

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M	**Contact Destination or Medical Control**	M

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

- Consider your safety first. Physical Restraint should be performed/assisted by Law Enforcement when available.
- All patients who receive either physical or chemical restraint must be continuously observed by ALS personnel on scene or immediately upon their arrival.
- Any transported patient who is handcuffed or restrained by Law Enforcement should be accompanied by an officer whenever possible. If not possible law enforcement must be immediately available.
- Be sure to consider all possible medical/trauma causes for behavior (hypoglycemia, overdose, substance abuse, hypoxia, head injury, etc.)
- If patient is suspected of excited delirium suffers cardiac arrest, consider a fluid bolus and sodium bicarbonate early.
- Restrained patients should never be maintained or transported in a prone position..
- Cold saline boluses 30 ml/kg with temperature ≥ 104 (up to 2 liters max in adults)

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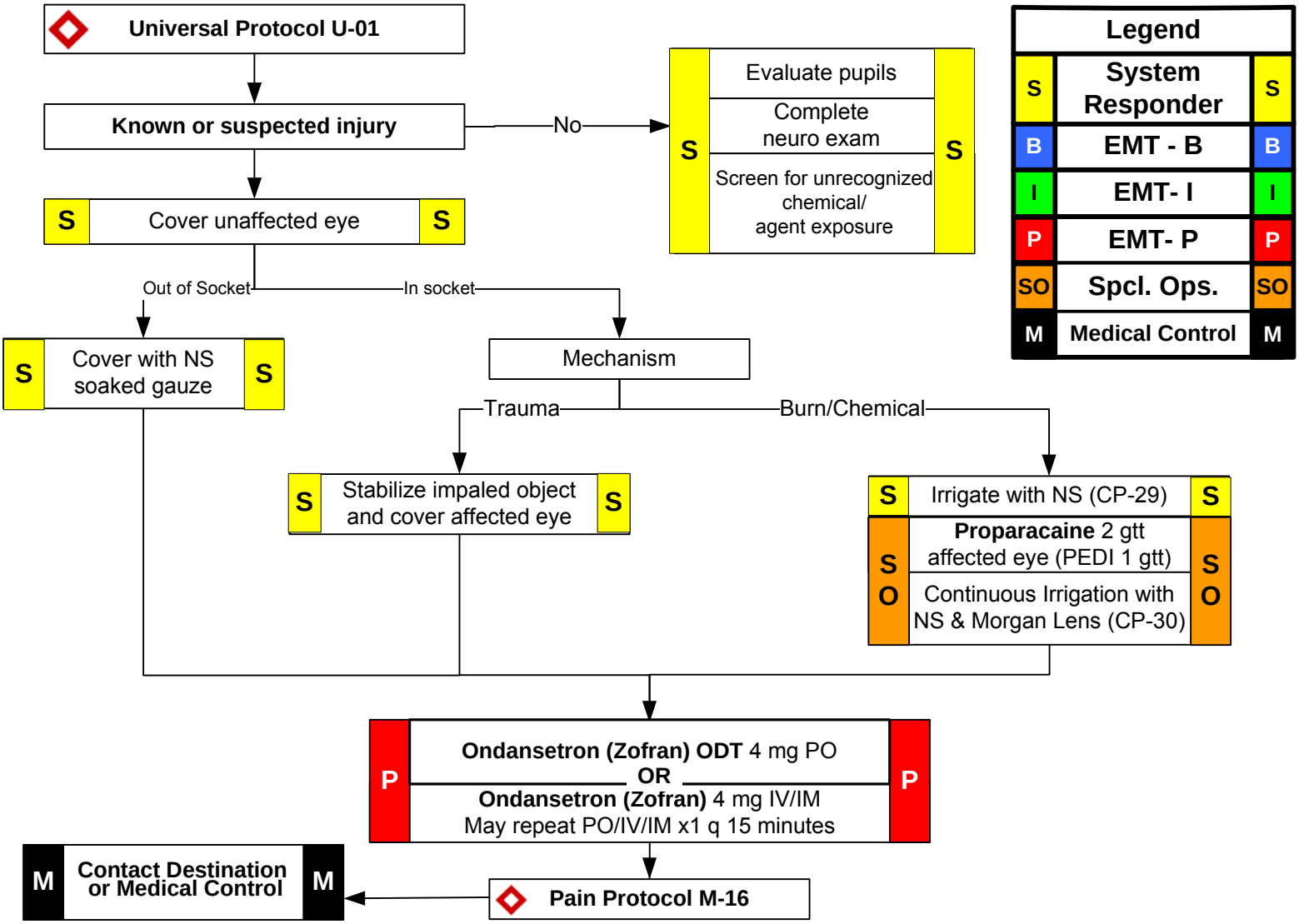
Eye Injury/Complaint

History:	Signs and Symptoms:	Differential:
• Time and injury/onset • Blunt/penetrating/chemical • Involved chemicals/MSDS • Wound Contamination • Medical Hx • Tetanus status • Normal visual acuity • Medications • Detached retina	• Pain, swelling, blood • deformity, contusion • Visual deficit/Loss • Leaking aqueous/vitreous humor • Upwardly fixed eye • Shooting or streaking light • Visual contaminants • Rust ring • Lacrimation	• Abrasion/Laceration • Globe rupture • Retinal nerve damage • Chemical/thermal burn • Orbital Fx • Orbital compartment syndrome • Neurological event • Acute glaucoma • Retinal artery occlusion



Pearls:

- Normal visual acuity can be present even with severe injury.
- **Place Lidocaine 100mg in each 1,000mL bag of NS for eye irrigation (ILS and above).**
- Remove contact lens when possible. If adherent to globe do not force. Irrigation may assist removal.
- Any chemical or thermal burns to the face/eyes should raise concern for respiratory insult
- Orbital fx raise concern for globe or nerve injury or compartment syndrome and need for repeat assessments
- Always cover both eyes to prevent further insult
- Use shield not pads for physical trauma to the eye. Pads ok for uninjured eye.
- DO NOT remove impaled objects
- Suspected globe rupture or compartment syndromes require emergent evaluation.

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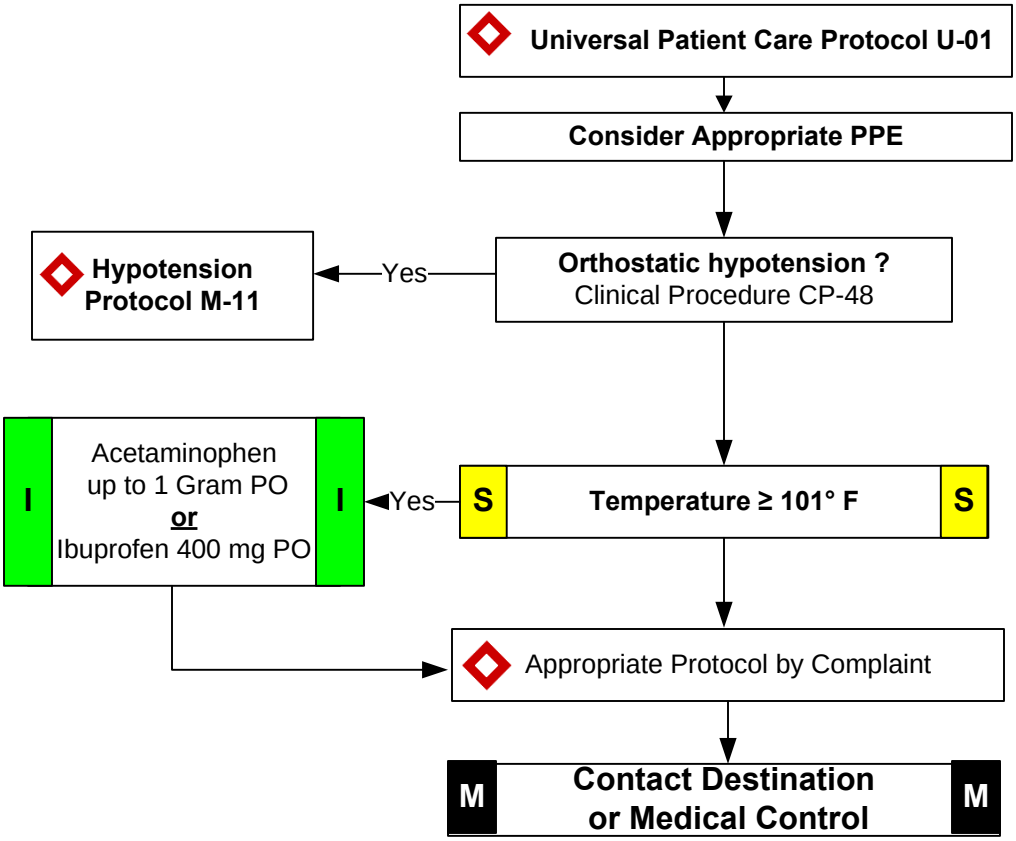
Fever/Infection Control

History:	Signs & Symptoms:	Differential:

• Age
• Duration of fever
• Severity of fever
• Past medical history
• Medications
• Immunocompromised (transplant, HIV, diabetes, cancer)
• Environmental exposure
• Last acetaminophen or ibuprofen
	• Warm
	• Flushed
	• Sweaty
	• Chills/Rigors
	Associated Symptoms (Helpful to localize source)
	• myalgias, cough, chest pain, headache, dysuria, abdominal pain, mental status changes or rash
		• Infections / Sepsis
		• Cancer / Tumors / Lymphomas
		• Medication or drug reaction
		• Connective tissue disease
		  • Arthritis
		  • Vasculitis
		• Hyperthyroid
		• Heat Stroke
		• Meningitis



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

- Patients with a history of liver failure should not receive acetaminophen.
- **Contact precautions** include standard PPE plus utilization of a gown, change of gloves after every patient contact, and strict hand washing precautions. This level of precaution is utilized when multi-drug resistant organisms (e.g. MRSA, scabies, or zoster (shingles)), or with other illnesses spread by contact are suspected.
- **Droplet precautions** include standard PPE plus a standard surgical mask for providers who accompany patients in the back of the ambulance and a surgical mask or NRB O2 mask for the patient. This level of precaution should be utilized with influenza, meningitis, mumps, streptococcal pharyngitis, and other illnesses spread via large particle droplets are suspected. A patient with a potentially infectious rash should be treated with droplet precautions.
- **All-hazards precautions**(Airborne Precautions) include standard PPE, contact precautions plus N-95 mask for providers. This level of precautions is utilized during the initial phases of an outbreak when the etiology of the infection is unknown or when the causative agent is found to be highly contagious (e.g. SARS,TB).
- Rehydration with fluids increased the patient's ability to sweat and improves heat loss.
- Allergies to NSAID's (non-steroidal anti-inflammatory medications) are a contraindication to Ibuprofen.
- Tylenol should not be used in the setting of environmental heat emergencies.

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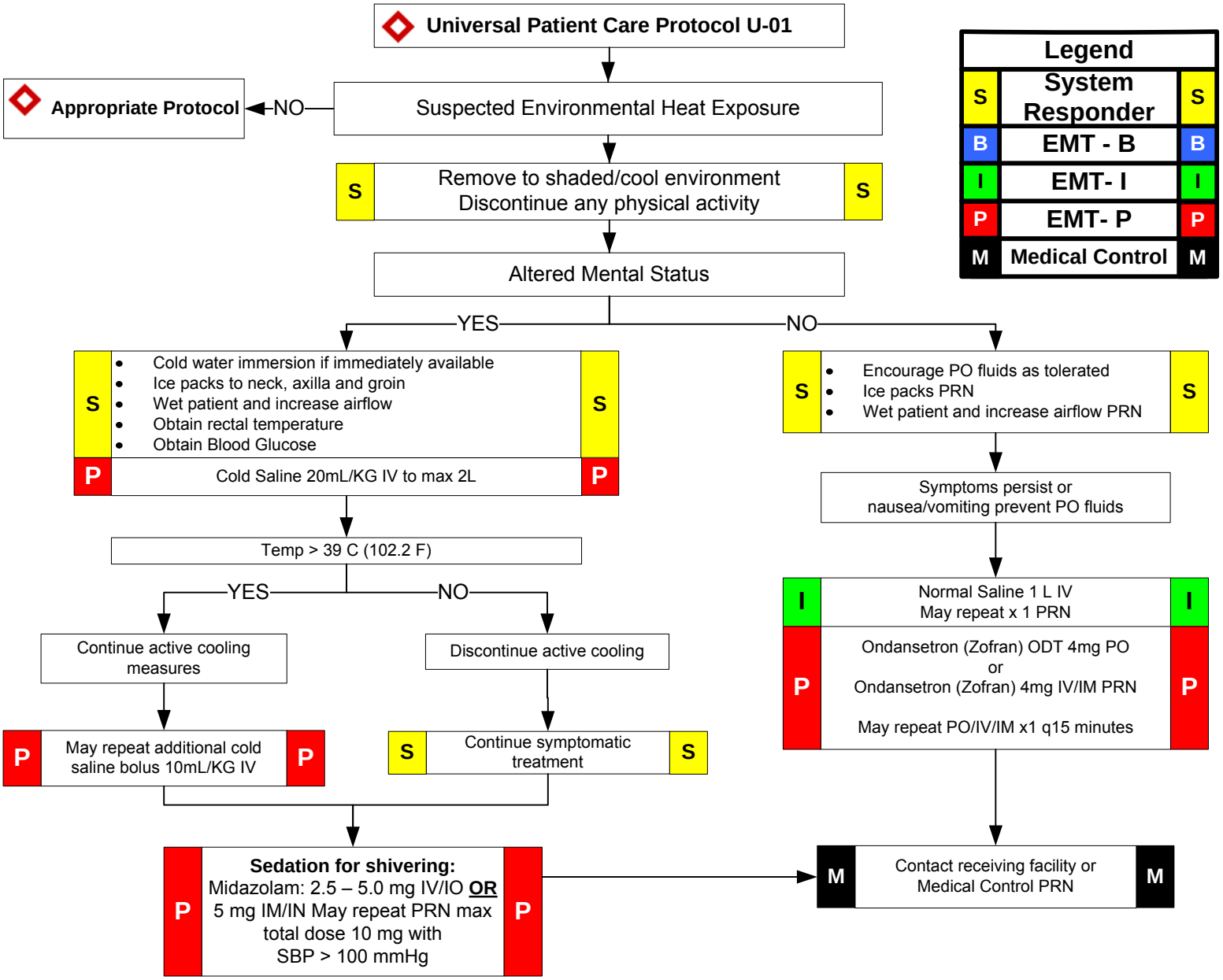
Environmental Hyperthermia

History:	Signs & Symptoms:	Differential:
• Recent exertion or heat exposure • Lack of acclimatization • Limited access/control of fluid intake • Cardiovascular disease • Medications (antipsychotics, anticholinergics, diuretics) • Lack of ability to control temperature within environment	• Weakness • Nausea & vomiting • Cramping • Syncope • Diaphoresis or anhydrosis • Altered Mental Status • Bizarre behavior • Hypotension • Tachycardia	• CVA • Dehydration • Encephalopathy • Meningitis • Head Trauma • Overdose/Toxin • Hypoglycemia • Excited Delirium • Alcohol withdrawal



Pearls:

- Exertional heat stroke should be suspected in anyone with hx of recent exertion and bizarre behavior or syncope.
- Any AMS should have Blood Glucose performed. Severe heat emergencies may lead to liver dysfunction and hypoglycemia.
- **If Cold saline is not available, ILS may begin normal saline boluses.**
- Rectal temperature should be obtained with provider and patient safety in mind and Patient's level of AMS.

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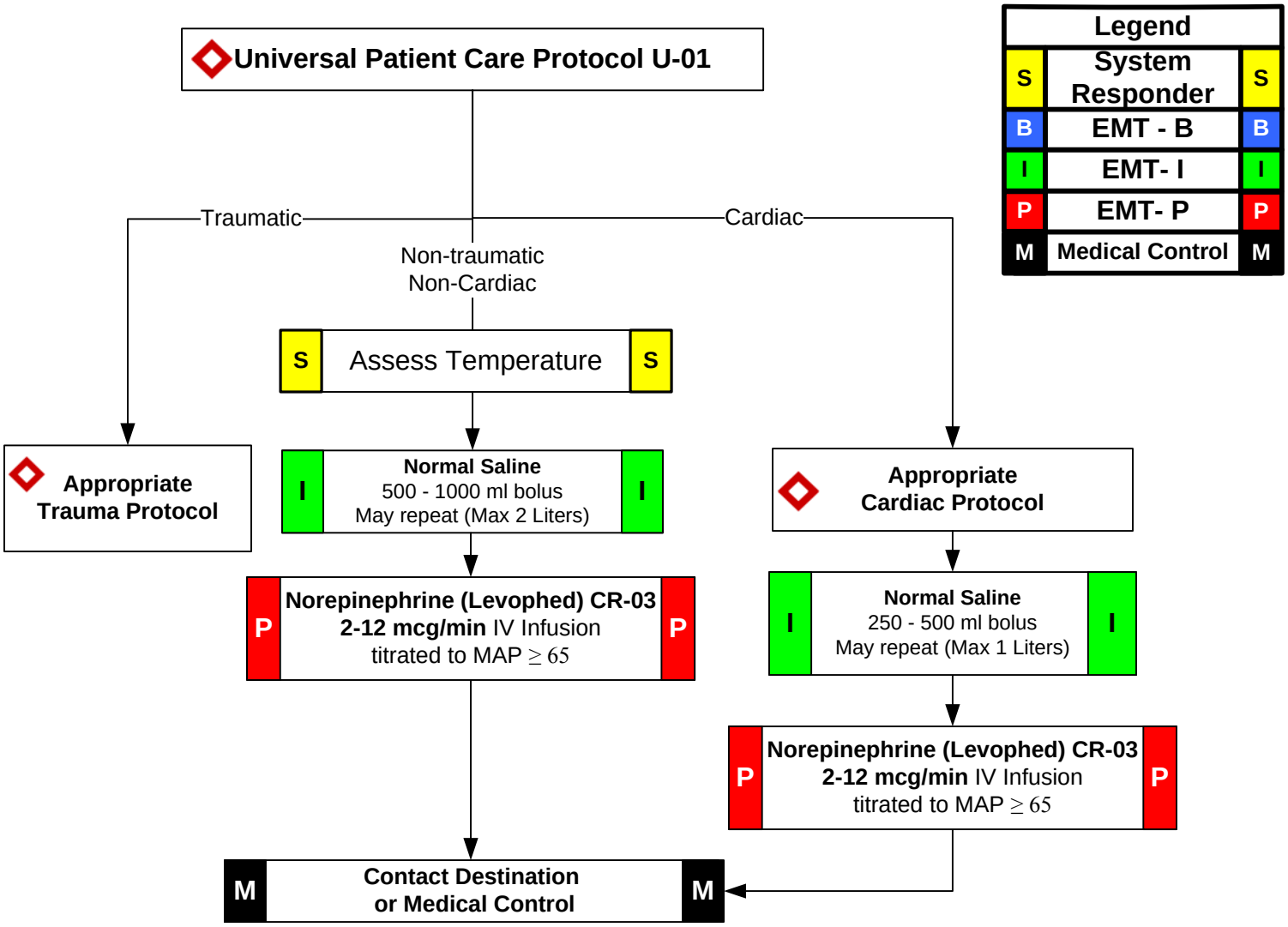
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

Hypotension (non-trauma)

History:	Signs and Symptoms:	Differential:
• Blood loss- vaginal or gastrointestinal bleeding, AAA, ectopic pregnancy • Fluid Loss- vomiting, diarrhea, fever • Infection • Cardiac ischemia (MI, CHF) • Medications • Allergic Reaction • Pregnancy	• Restlessness, confusion • Weakness, dizziness • Hypotension • Weak, rapid pulse • Pale, cool, clammy skin • Delayed capillary refill • Coffee-ground emesis • Tarry stools	• Shock • Ectopic pregnancy • Dysrhythmias • Pulmonary embolus • Tension pneumothorax • Toxic exposure



Pearls:

- Hypotension can be defined as a systolic blood pressure of (less than) < 90 mmHg or MAP < 60
- Consider all possible causes of shock and treat per appropriate protocol.
- Patients should always have adequate intravascular fluid load prior to the use of vasopressors .
- Place in supine position unless otherwise contraindicated.

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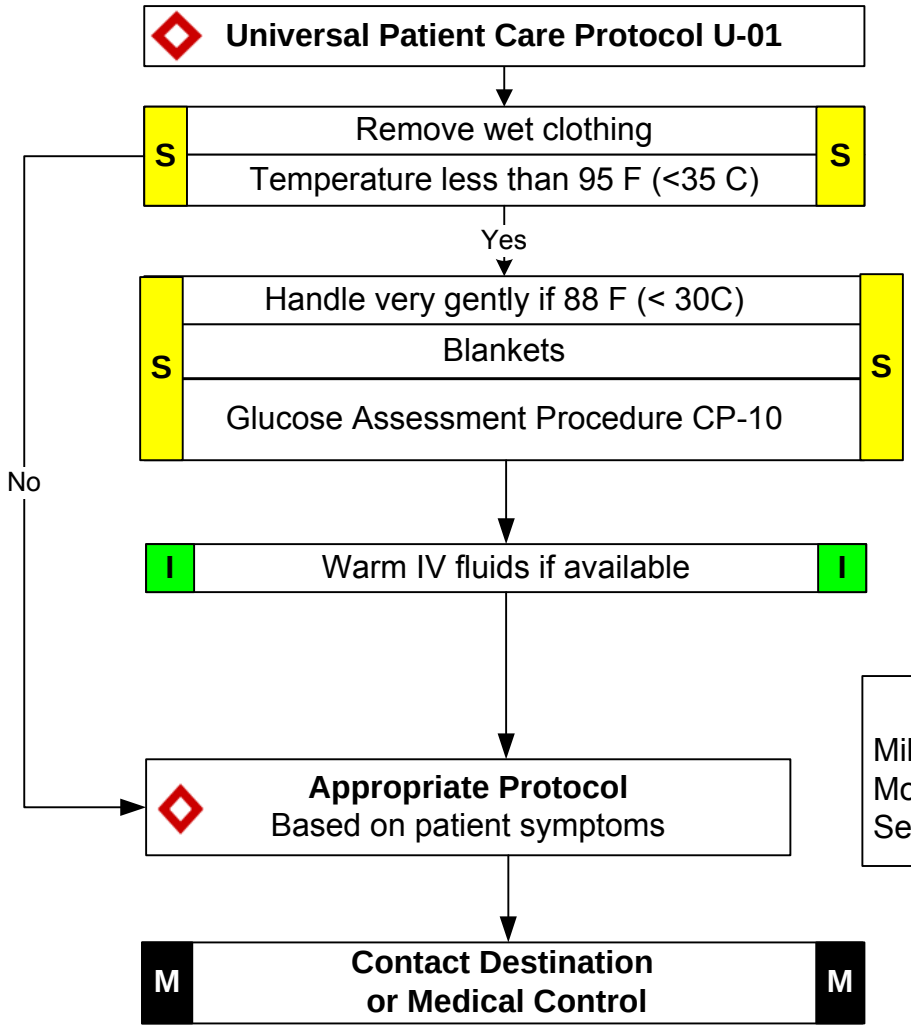
City of Austin/Travis County EMS System

Hypothermia Environmental

History:	Signs and Symptoms:	Differential:
• Past medical history • Medications • Exposure to environment even in normal temperatures • Exposure to extreme cold • Extremes of age • Drug use: Alcohol, barbiturates • Infections/sepsis • Length of exposure/wetness • Ambient temperature • Exposure to wind/water • Duration of exposure	• Cold, clammy • Shivering • Mental status changes • Extremity pain or sensory abnormality • Bradycardia • Hypotension or shock	• Metabolic disorder (hpoglycemia, hypothyroidism) • Toxins • Environmental exposure • Shock • Sepsis



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Hypothermia:
Mild: 89.6-95 F (32-35 C)
Moderate: 82.4-89.6 F (28-32 C)
Severe: < 82.4 F (<28 C)

Pearls:
- Extremes of age are more susceptible (young & old)
- < 34 C, shivering may diminish at < 31 C shivering may stop.
- With temperature less than 30 C (88 F) ventricular fibrillation is common cause of death. Handle patients gently to reduce this risk. Transport immediately for re-warming.
- If the temperature is unable to be measured, treat the patient based on the suspected temperature.
- Hypothermia may produce severe physiologic bradycardia. Do not treat unless profound hypotension unresponsive to fluids.

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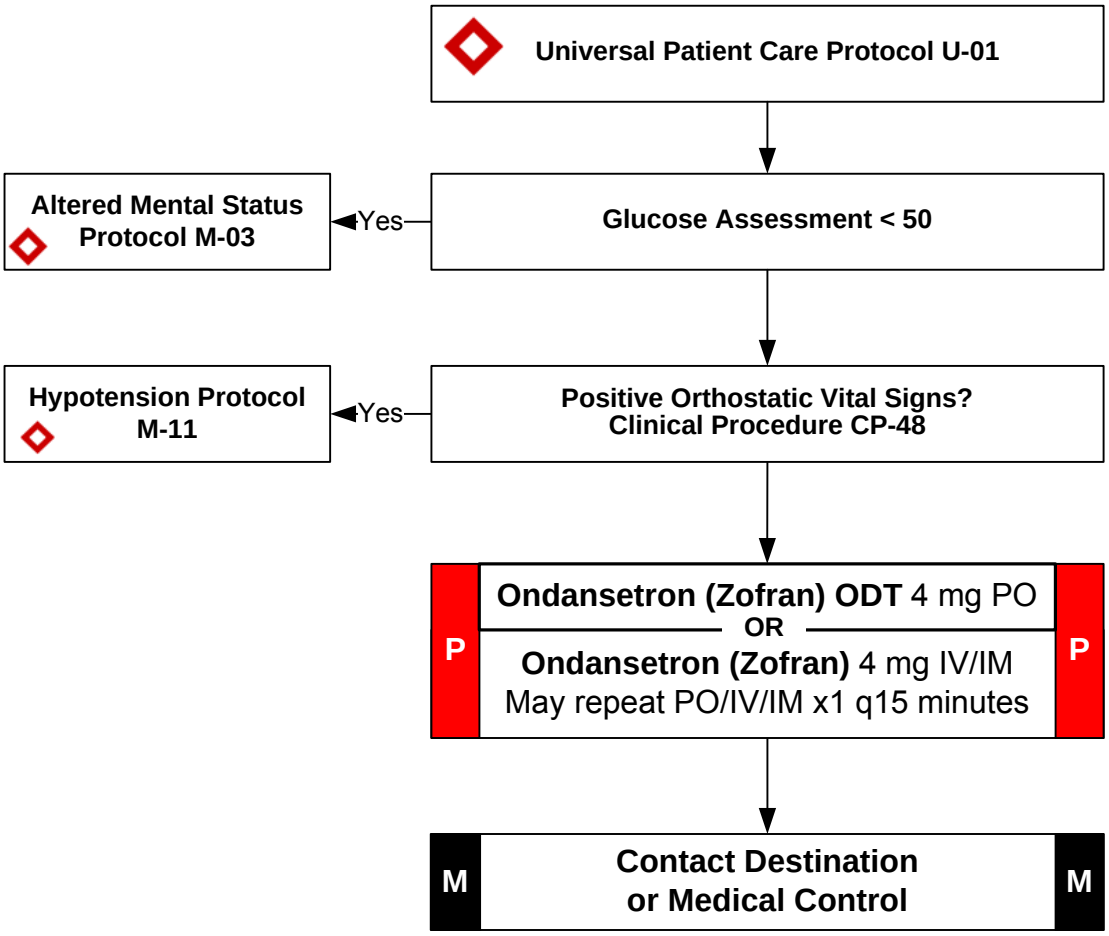
Nausea/Vomiting

History:	Signs and Symptoms:	Differential:
• Time of last meal • Last bowel movement / emesis • Improvement or worsening with food or activity • Other sick contacts • Past Medical History • Past Surgical History • Medications • LMP / Pregnancy • Travel history • Bloody Emesis or diarrhea • Untreated water • Suspected food poisoning	• Fever • Pain • Constipation • Diarrhea • Anorexia • Hematemesis	• CNS (Increased pressure, headache, stroke, CNS Lesions, trauma or hemorrhage), • Vestibular • AMI • Drugs (NSAIDs, antibiotics, narcotics, chemotherapy.) • GI or Renal disorders • Diabetic Ketoacidosis • Uremia • Gynecologic disease (Ovarian Cyst / PID) • Infections (pneumonia, influenza) • Electrolyte abnormalities • Food or Toxin induced • Pregnancy



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:
- Diabetic ketoacidosis may present as vomiting and/or abdominal pain.
- Number of times of emesis
- Appearance of emsis: (bloody, coffee grounds, bilious –green bile--, solids and liquid or just liquid)

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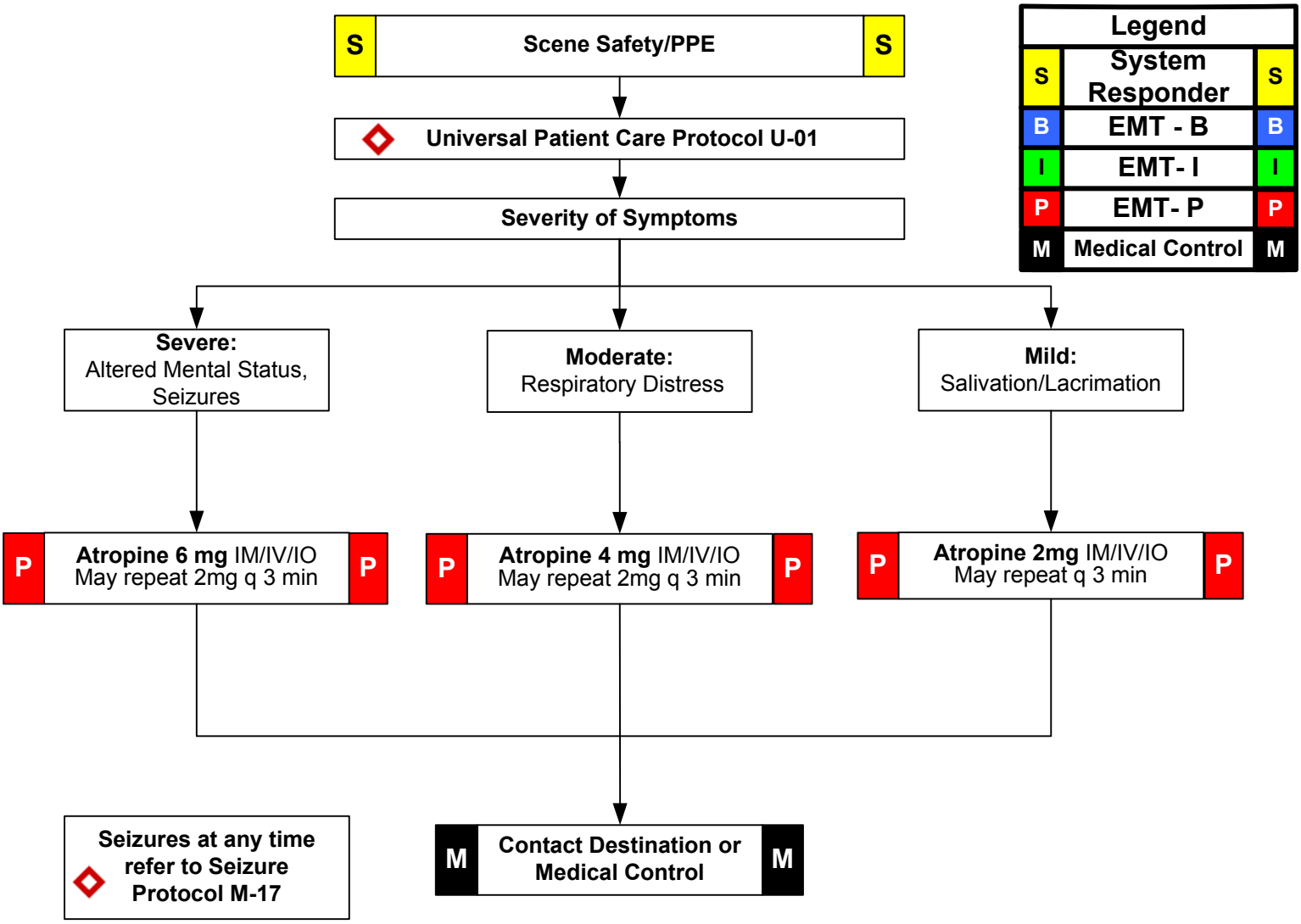
Organophosphate Exposure

History:	Signs and Symptoms:	Differential:
• Substance • Time of exposure • Decontamination performed • Treatment prior to arrival • Secondary Device(s)	• Salivation • Lacrimation • Urination • Defecation • GI distress • Emesis • Bronchospasm • Bronchorrhea • Bradycardia • Seizure	• Stroke • MI • Asthma/COPD • Other chemical weapon • Biologic weapon • Overdose • Food borne illness • Airborne irritant (hydrogen sulfide, chlorine, etc)



Pearls:
- Follow HazMat procedures for decontamination.
- Assure decontamination prior to initiating treatment unless specially trained and equiped.
- Atropine should be given until salivation improves. There is no max dose of Atropine in this setting.
- Treat hypotension per Hypotension Protocol M - 11.

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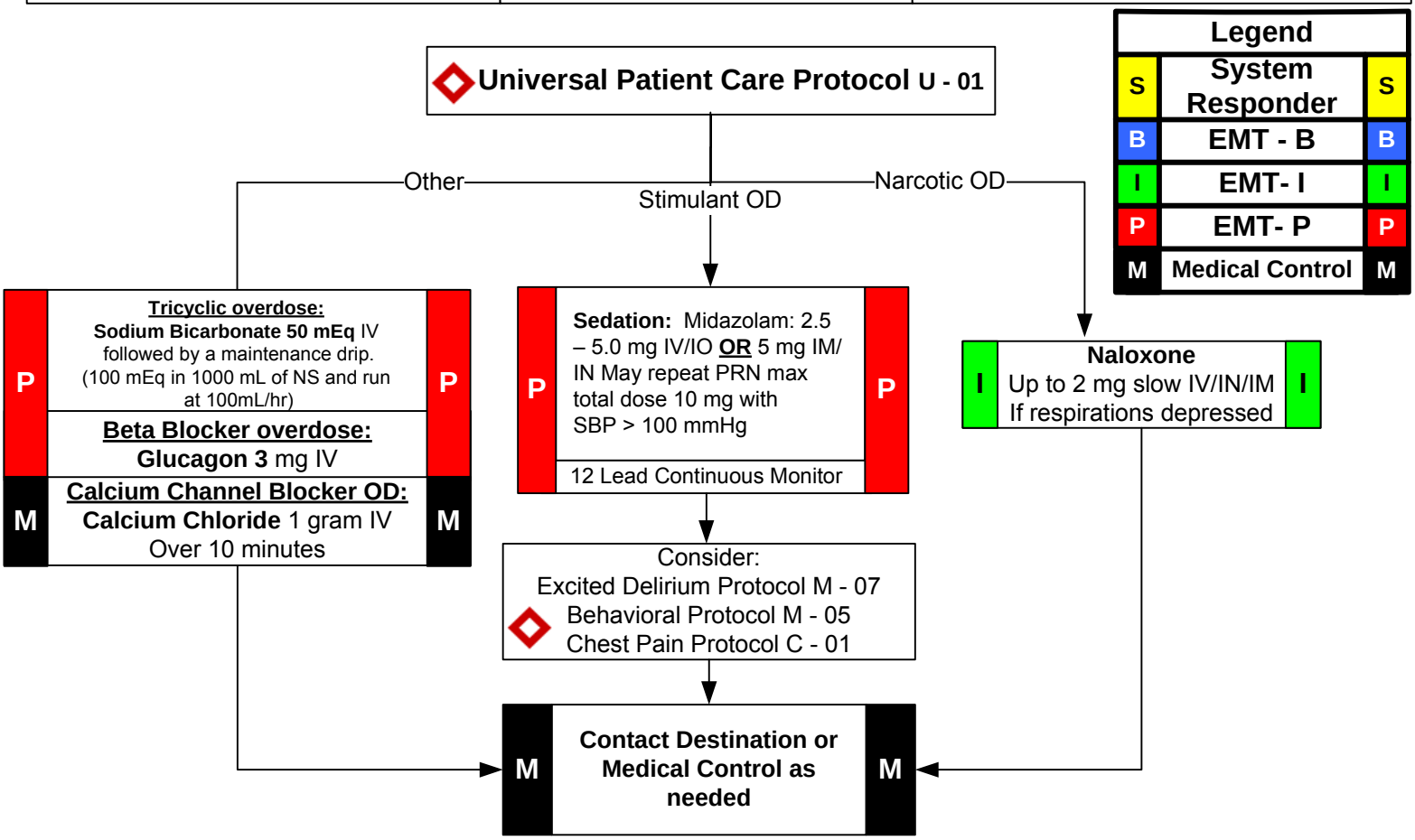
Overdose

History:	Signs and Symptoms:	Differential:
• Ingestion or suspected ingestion of a possibly toxic substance • Substance ingested, route, quantity • Time of ingestion • Reason (suicidal, accidental, criminal) • Available medication in home • Past medical history, medications	• Mental status changes • hypotension/ hypertension • Decreased respiratory rate • Tachycardia, dysrhythmias • Seizures	• Tricyclic antidepressants • Acetaminophen (Tylenol) • Depressants • Stimulants • Anticholinergic • Cardiac medications • Solvents, alcohols, cleaning agents • Insecticides (organophosphates)



Pearls:

- Do not rely on patient history of ingestion especially in suicide attempts.
- Tricyclic: 4 major areas of toxicity: seizures, dysrhythmias, hypotension, decreased mental status or coma; rapid progression from alert mental status to death.
- Depressants: decreased HR, decreased BP, decreased temperature, decreased respirations, non-specific pupils.
- Stimulants: increased HR, increased BP, increased temperature, dilated pupils, seizures.
- Anticholinergic: increased HR, increased temperature, dilated pupils, mental status changes.
- Cardiac Meds: dysrhythmias and mental status changes.
- Solvents: Nausea, vomiting, and mental status changes.
- Insecticides: increased or decreased HR, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils.
- Consider contacting the US/Texas Poison Control Center for guidance. 1-800-222-1222
- DECON of Haz-Mat patients should be performed by trained personnel prior to initial patient contact or transport.

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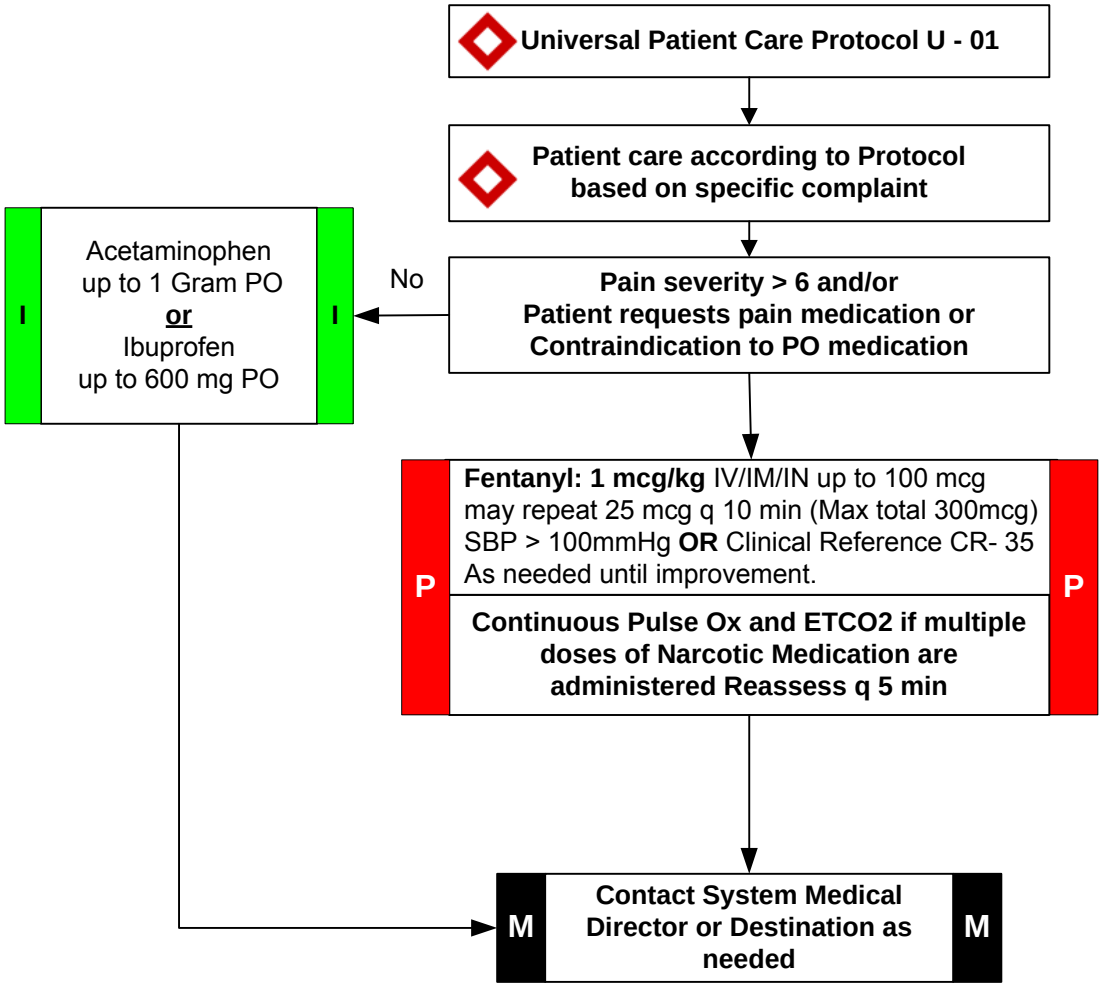
Pain Management

History:	Signs and Symptoms:	Differential:
• Age • Location • Duration • Severity (1-10) • Past Medical History • Medications • Drug allergies • Medications taken prior to arrival	• Severity (pain scale) • Quality • Radiation • Relation to movement, respiration • Increased with palpation of area.	• Per the specific protocol • Musculoskeletal • Visceral (abdominal) • Cardiac • Pleural / Respiratory • Neurogenic • Renal (colic)



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:
- Pain severity (0-10) is a vital sign to be recorded pre and post IV or IM medication delivery and at disposition.
- Vital signs should be obtained pre, 5 minutes post, and at disposition with all pain medications.
- Monitor patient closely for over sedation - refer to overdose protocol if needed
- Head injury patients should not receive pain medication
- Do not administer Acetaminophen to patients with history of liver disease.

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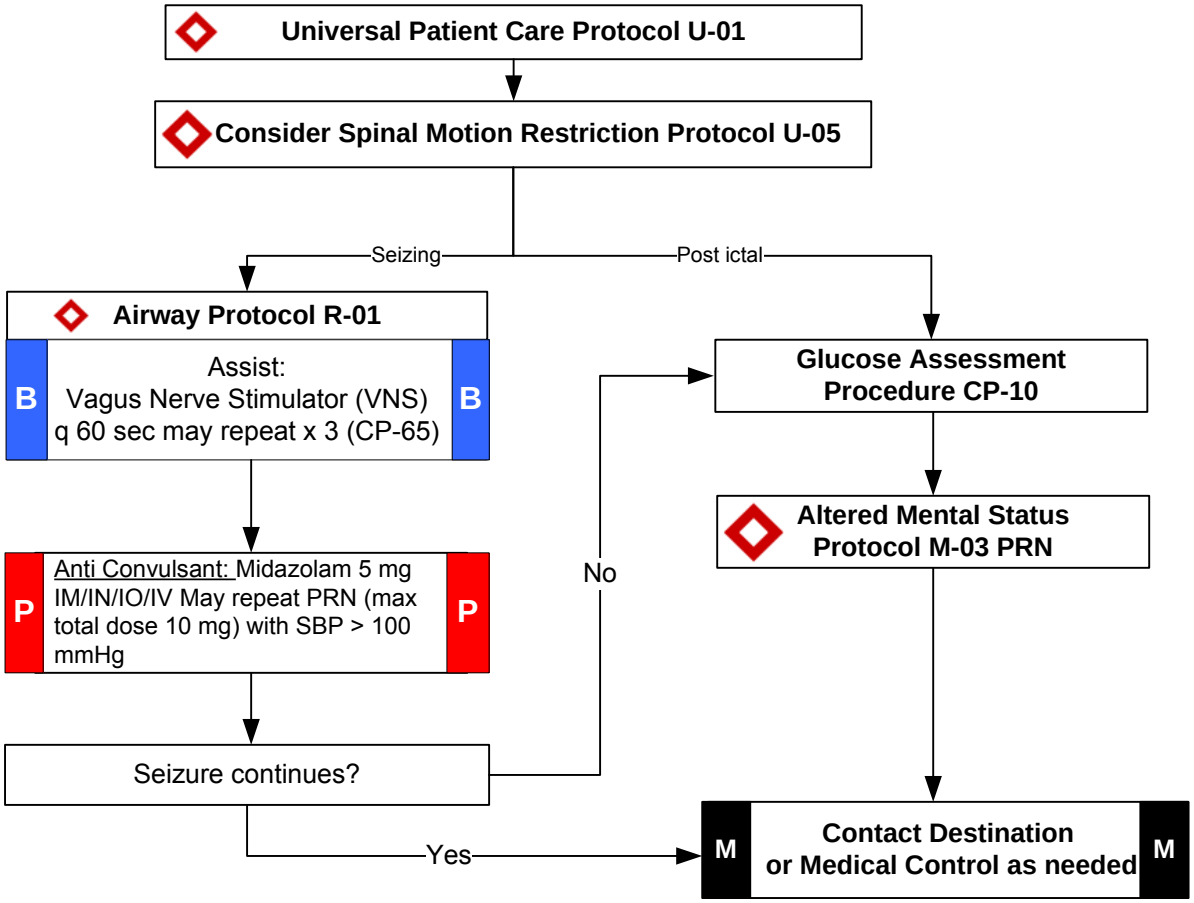
Seizure

History:	Signs and Symptoms:	Differential:
• Reported / witnessed seizure activity • Previous seizure history • Medical alert tag information • Seizure medications • History of trauma • History of diabetes • History of pregnancy	• Decreased mental status • Sleepiness • Incontinence • Observed seizure activity • Evidence of trauma • Unconscious	• CNS (Head) trauma • Tumor • Metabolic, Hepatic, or Renal failure • Hypoxia • Electrolyte abnormality (Na, Ca, Mg, K+) • Drugs, Medications, Non-compliance • Infection / Fever • Alcohol withdrawal • Eclampsia • Stroke • Hyperthermia • Hypoglycemia



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

- Status epilepticus is defined as two or more successive seizures without a period of consciousness or recovery. This is a true emergency requiring rapid airway control, treatment, and transport.
- **Grand mal seizures (generalized)** are associated with loss of consciousness, incontinence, and tongue trauma.
- **Focal seizures (petit mal)** effect only a part of the body and are not usually associated with a loss of consciousness
- **Jacksonian seizures** are seizures which start as a focal seizure and become generalized.
- Assess possibility of occult trauma and substance abuse.
- Be prepared to assist ventilations, especially if Midazolam is used.
- For any seizure in a pregnant or recently post partum patient, follow the **OB Emergencies Protocol OB - 02**.

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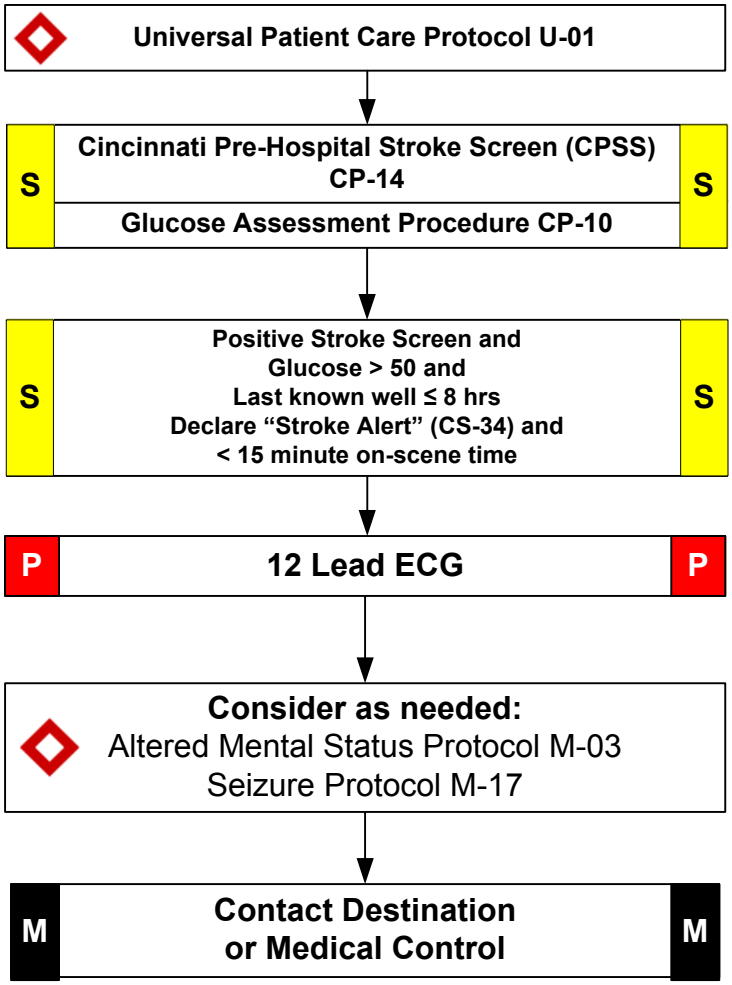
Suspected Stroke

History:	Signs and Symptoms:	Differential:
• Previous CVA, TIAs • Previous cardiac / vascular surgery • Associated diseases: diabetes, hypertension, CAD • Atrial fibrillation • Medications (blood thinners) • History of trauma • DNR/Code status	• Altered mental status • Weakness / Paralysis • Blindness or other sensory loss • Aphasia / Dysarthria • Syncope • Vertigo / Dizziness • Vomiting • Headache • Seizures • Respiratory pattern change • Hypertension / hypotension	• Altered Mental Status • TIA (Transient ischemic attack) • Seizure • Hypoglycemia • Hypoxia/Hypercarbia **(~ 85%)** • Stroke Thrombotic/Embolic(85%) Hemorrhagic (15%) • Tumor • Trauma



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

- **Transport to Comprehensive Stroke Center if ≤ 8 hrs. from onset of symptoms**
- Onset of symptoms is defined as the last time the patient was seen symptom free (i.e. awakening with stroke symptoms would be defined as an onset time of the previous night when patient was symptom free)
- Whenever possible, a family member should accompany the patient to the hospital to provide a detailed history.
- The differential listed on the Altered Mental Status Protocol should also be considered.
- Be alert for airway problems (swallowing difficulty, vomiting).
- Hypoglycemia can present as a localized neurological deficit, especially in the elderly.

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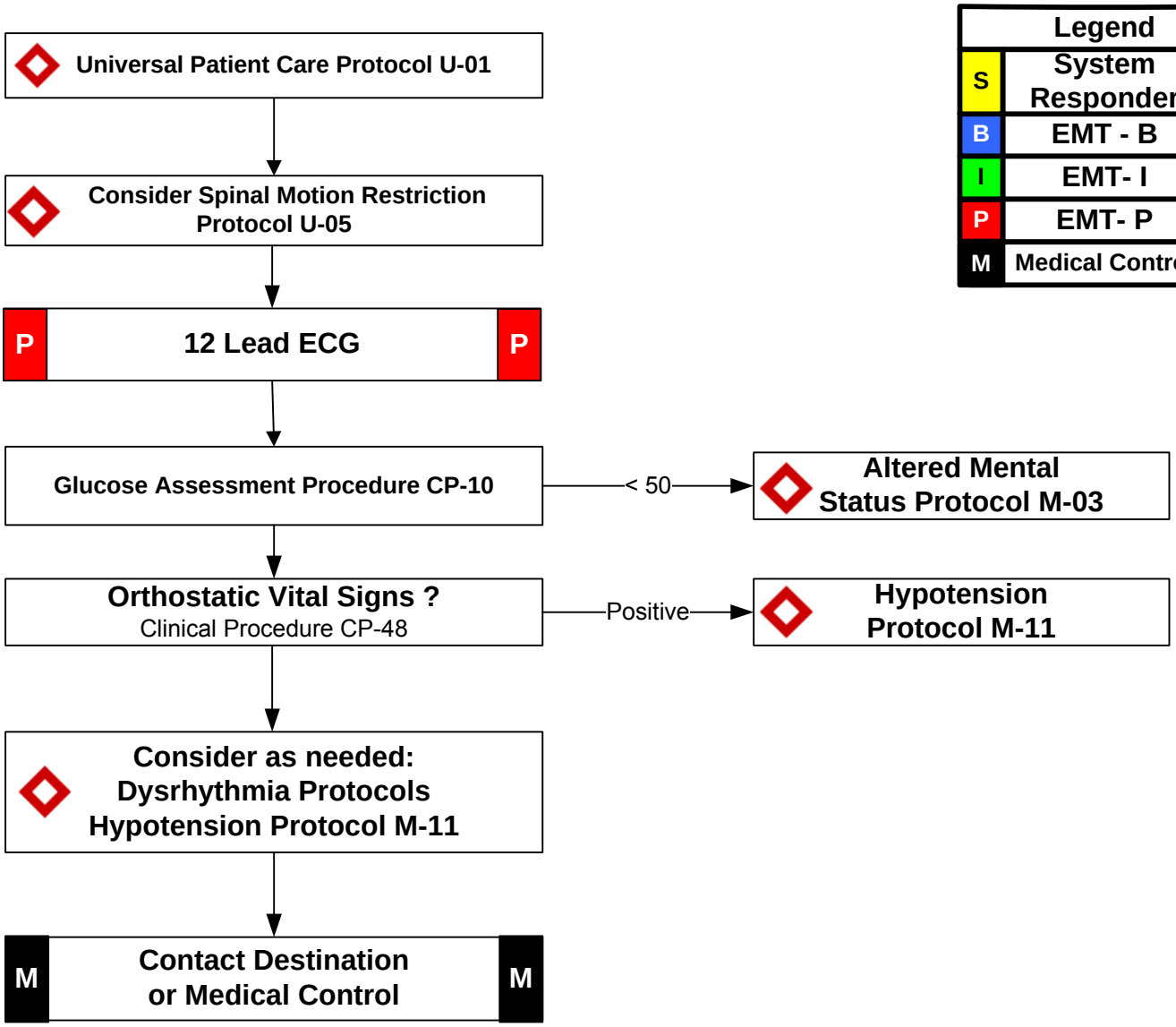
Syncope

History:	Signs & Symptoms:	Differential:
• Presyncopal symptoms • Occult blood loss (GI, ectopic) • LMP, vaginal bleeding • Nausea, vomiting, diarrhea • Chest pain/palpitations • Shortness of breath • PMHx: Cardiac, CVA, Sz • New medications	• Loss of consciousness with recovery • Lightheadedness, dizziness • Palpitations, slow or rapid pulse • Pulse irregularity • Decreased blood pressure	• Vasovagal • Hypotension/Shock • Cardiac syncope • Micturation / Defecation syncope • Stroke • Hypoglycemia • Seizure • Toxicologic • Medication effect (hypotension)



Pearls:
- Assess for signs and symptoms of trauma if associated or questionable fall with syncope.
- Consider dysrhythmias, GI bleed, ectopic pregnancy, and seizure as possible causes of syncope.
- More than 25% of geriatric syncope is cardiac dysrhythmia based.

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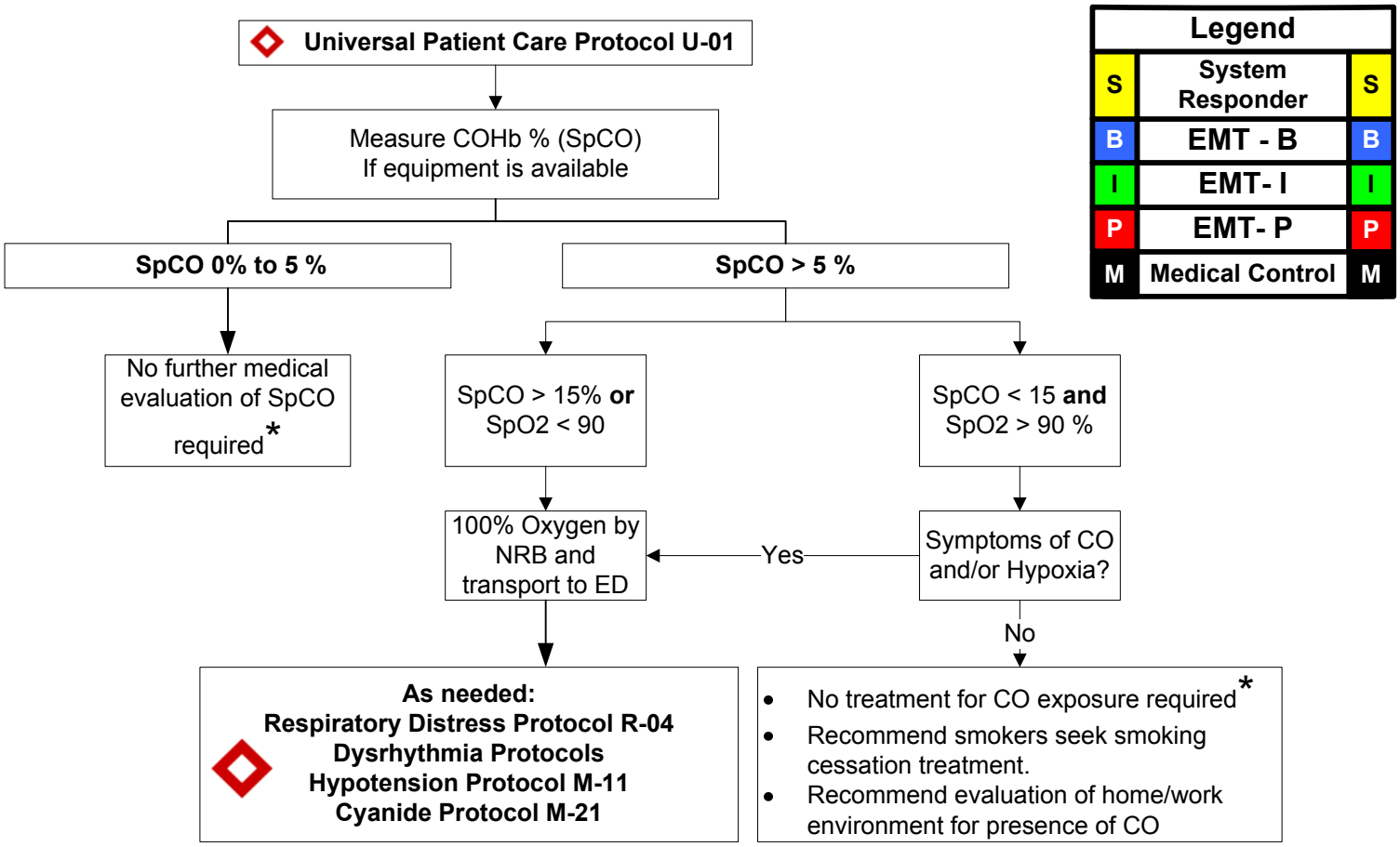
Carbon Monoxide

History:	Signs and Symptoms:	Differential:
• Known or suspected CO exposure • Suspected source/duration exposure • Age • Known or possible pregnancy • Reason (accidental, suicidal) • Measured atmospheric levels • Past medical history, medications	• Altered mental status/dizziness • Headache, Nausea/Vomiting • Chest Pain/Respiratory distress • Neurological impairments • Vision problems/reddened eyes • Tachycardia/tachypnea • Arrhythmias, seizures, coma	• Effects of other toxic fire byproduct • Acute cardiac event • Acute neurological event • Flu/GI illness • Acute intoxication • Diabetic Ketoacidosis • Headache of non-toxic origin



Pearls:

- *** Fetal hemoglobin has a greater attraction for CO than maternal hemoglobin. Females who are known to be pregnant or who could be pregnant should be transported to the ED.**
- The absence (or low detected levels of) of COHgb is not a reliable predictor of firefighter or victim exposure to other toxic byproducts of fire.
- In obtunded fire victims, consider cyanide treatment protocol M-21
- The differential list for CO Toxicity is extensive. Attempt to evaluate other correctable causes when possible
- Chronic CO exposure is clinically significant; therefore advice on smoking cessation is important medical instruction

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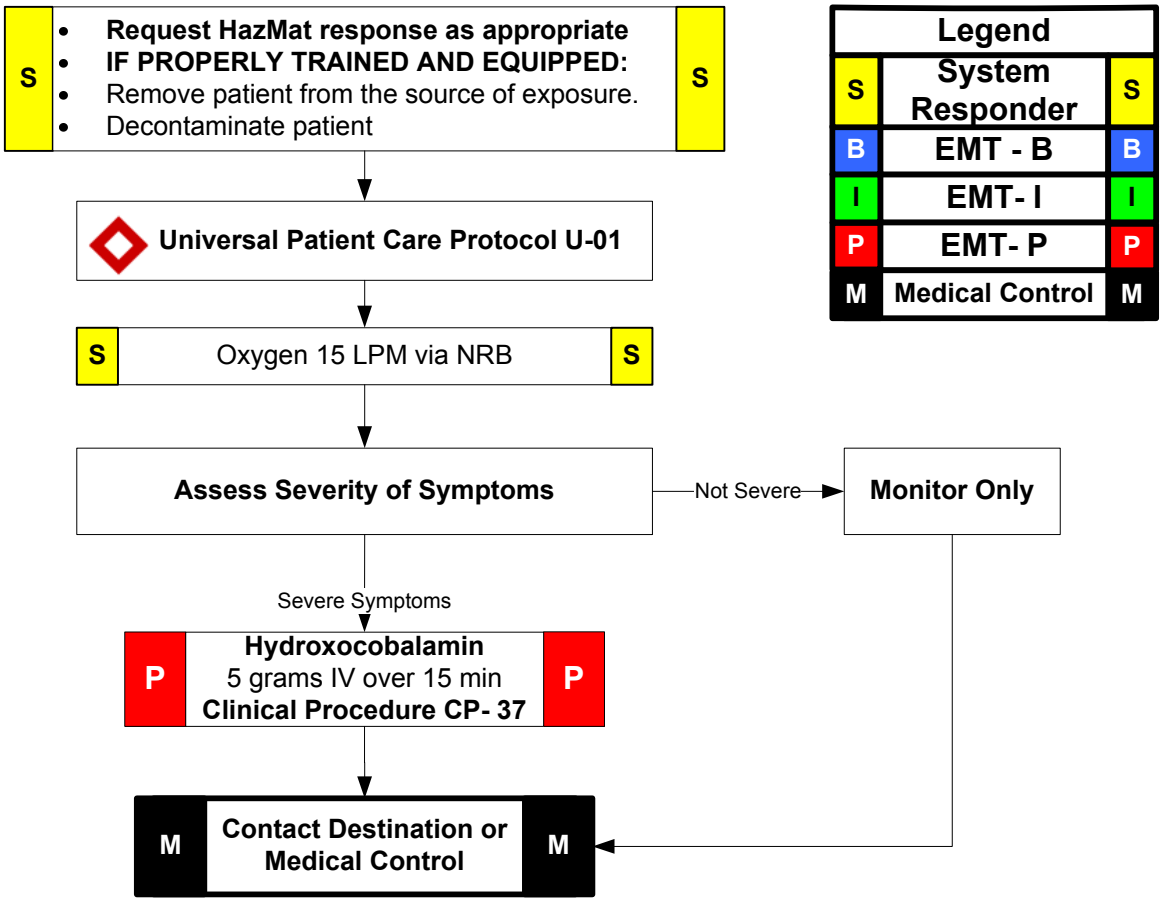
Cyanide

History:	Signs and Symptoms:	Differential:
• Suspected source/duration exposure • Age • Known or possible pregnancy • Reason (accidental, suicidal) • Past medical history, medications	• Headache,weakness, vertigo • Nausea/Vomiting • Chest Pain/Respiratory distress • Tachycardia/tachypnea **SEVERE:** • Cardiac Arrest • Seizures • Altered mental status/coma	• Acute coronary syndrome • Stroke/TIA • Pulmonary embolus • Meningitis/encephalitis • Head trauma • Diabetes • Acute intoxication



Additional Protocols As Needed:
Carbon Monoxide M-20
Hypotension/Shock M-11
Hypothermia M-12
Seizure M-17
Eye Pain M-08

Pearls:
- Do NOT begin transport until all contaminated clothing has been removed and patient has been decontaminated and cleared for transport.
- Be alert for exposure related dyspnea/tachypnea without cyanosis, nausea/vomiting, seizures, hyper- or hypotension.
- Oxygen via NRFM should be applied to all patients; pulse oximeter readings are unreliable in presence of cyanide or CO poisoning.
- If smoke inhalation always consider carbon monoxide poisoning.
- Mix hydroxocobalamin carefully with strict adherence to the instructions. Do NOT shake.

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Epistaxis

History:	Signs & Symptoms:	Differential:
• Age • Past medical history • Medications (HTN, anticoagulants, Asprin, NSAIDS) • Previous episodes of epistaxis • Trauma • Duration of bleeding • Quantity of bleeding	• Bleeding from nasal passage • Pain • Nausea • Vomiting	• Trauma • Infection (viral URI or Sinusitis) • Allergic rhinitis • Lesions (polyps, ulcers) • Hypertension

Universal Patient Care Protocol U-01

↓

S — Ice packs
Compress nostrils
Tilt head forward — S

↓

P — **Neo-Synephrine (phenylephrine)**
Nasal Spray - 2 sprays to affected nostril and direct pressure — P

↓

I — **Consider IV NS Bolus**
titrate to SBP ≥ 100 mmHg
(max. 2 Liters) — I

↓

M — **Contact Destination or Medical Control** — M

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Consider as appropriate:
Airway Protocol R-01
Trauma Protocols T-06, T-07
Hypotension M-11

PEARLS:

- Recommended Exam: Mental Status, HEENT, Heart, Lungs, Neuro
- Avoid Neo-Synephrine in patients who have a blood pressure of greater than 110 diastolic or known coronary artery disease.
- Bleeding may also be occuring posteriorly. Evaluate for posterior blood loss by examining the posterior pharnyx.
- Anticoagulants include warfarin (Coumadin), heparin, enoxaparin (Lovenox), dabigatran (Pradaxa), rivaroxaban (Xarelto), and many over the counter headache relief powders.
- Anti-platelet agents like aspirin, clopidogrel (Plavix), aspirin/dipyridamole (Aggrenox), and ticlopidine (Ticlid) can contribute to bleeding.

Trauma Protocols: Adult and Pediatric

Version 020415 (MD 14-09)

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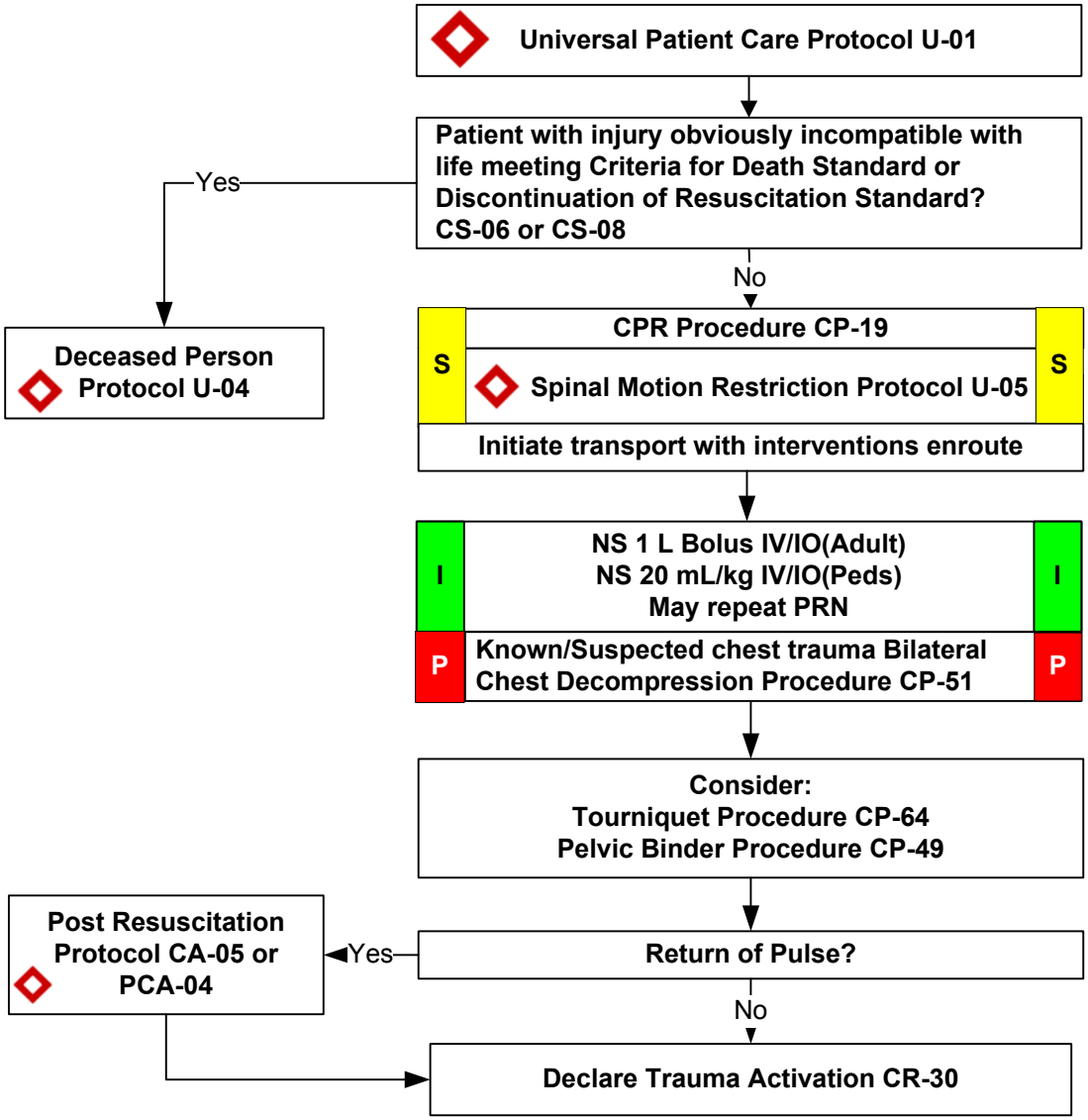
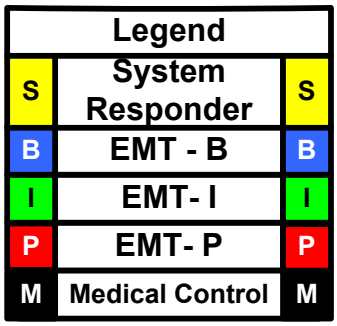
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

Trauma Arrest Adult/Pedi

History:	Signs and Symptoms:	Differential:

• Patient who has suffered traumatic injury and is now pulseless	• Evidence of penetrating trauma
	• Evidence of blunt trauma
		• Medical condition preceding traumatic event as cause of arrest.
		• Tension Pneumothorax
		• Hypovolemic Shock
		  • External hemorrhage
		  • Unstable pelvic fracture
		  • Displaced long bone fracture(s)
		  • Hemothorax
		  • Intra-abdominal hemorrhage
		  • Retroperitoneal hemorrhage





Pearls:

- Discontinuation/No initiation of Resuscitation:
  1. Injuries obviously incompatible with life (decapitation, incineration, obvious destruction of vital organs of torso/head)
  2. Patients with suspected traumatic mechanism found pulseless and apneic by first provider on scene with no respiratory effort after basic airway maneuvers **AND,** Organized electrical activity on ECG with rate < 40 BPM.
  3. Drowning with submersion > 20 minutes from arrival of first Public Safety entity to patient in position for resuscitation.
- Consider using medical cardiac arrest protocols if uncertainty exists regarding medical or traumatic cause of arrest.

Burns

History:
- Type of exposure (heat, gas, chemical)
- Inhalation injury
- Time of Injury
- Past medical history and Medications
- Other trauma
- Loss of Consciousness

Tetanus/Immunization status

Signs & Symptoms:
- Burns, pain, swelling
- Dizziness
- Loss of consciousness
- Hypotension/shock
- Airway compromise/distress, singed facial or nasal hair, hoarseness / wheezing

Differential:
- Superficial (1°) red and painful
- Partial thickness (2°) blistering
- Full thickness (3°) painless and charred or leathery skin
- Chemical
- Thermal
- Electrical
- Radiation

Legend

S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Universal Patient Care Protocol U-01

Airway Protocol R-01

S — Remove rings, bracelets, and other constricting items — S

Thermal

S — If burn < 10% body surface area Cool the wound with Normal Saline or Sterile Water — S

S — Cover burn with a **Dry** sheet or dressings — S

I — NS IV per Parkland Burn Formula CR-18 — I

P — Fentanyl: 1 mcg/kg IV every 5 min (Max total 400mcg) SBP > 100 mmHg **OR** Clinical Reference CR - 35 — P

Chemical

S — Remove clothing or expose area Brush off any dry chemicals or powder — S

Eye involvement ? **Eye Injury/Complaint Protocol M-08**

S — Continuously flush area with water or NS — S

M — **Contact System Medical Director or Destination as needed** — M

- Pearls:
- Evaluate BSA : Use chart or use one side of patients hand = 1% BSA
- Critical Burns:
  - >20% 2° and 3° body surface area (BSA) age > 10;
  - >10% BSA age < 10 or > 50;
  - 3° burns >5% BSA;
  - 2° and 3° burns to face, eyes, hands or feet or genitalia; electrical burns; respiratory burns; deep chemical burns;
  - Burns with extremes of age or chronic disease; and burns with associated major traumatic injury.
- Minor burns (< 5% BSA 2nd and 3rd) not complicated by airway compromise or trauma do not require transport to a trauma center.
- Potential CO exposure should be treated with 100% oxygen.
- Circumferential burns to extremities are dangerous due to potential vascular compromise 2° to soft tissue swelling.
- Burn patients are prone to hypothermia - Never apply ice or cool burns that involve >10% body surface area.
- Do not overlook the possibility of multiple system trauma or child abuse with burn injuries.
- 2nd or 3rd degree burn >10% BSA – Fluid therapy following Parkland Burn Formula.
- Parkland Formula = NS 2 mL/kg x % TBSA 2nd or 3rd burn over the first 8 hours.
- ETCO2 if multiple doses of Narcotic Medication administered

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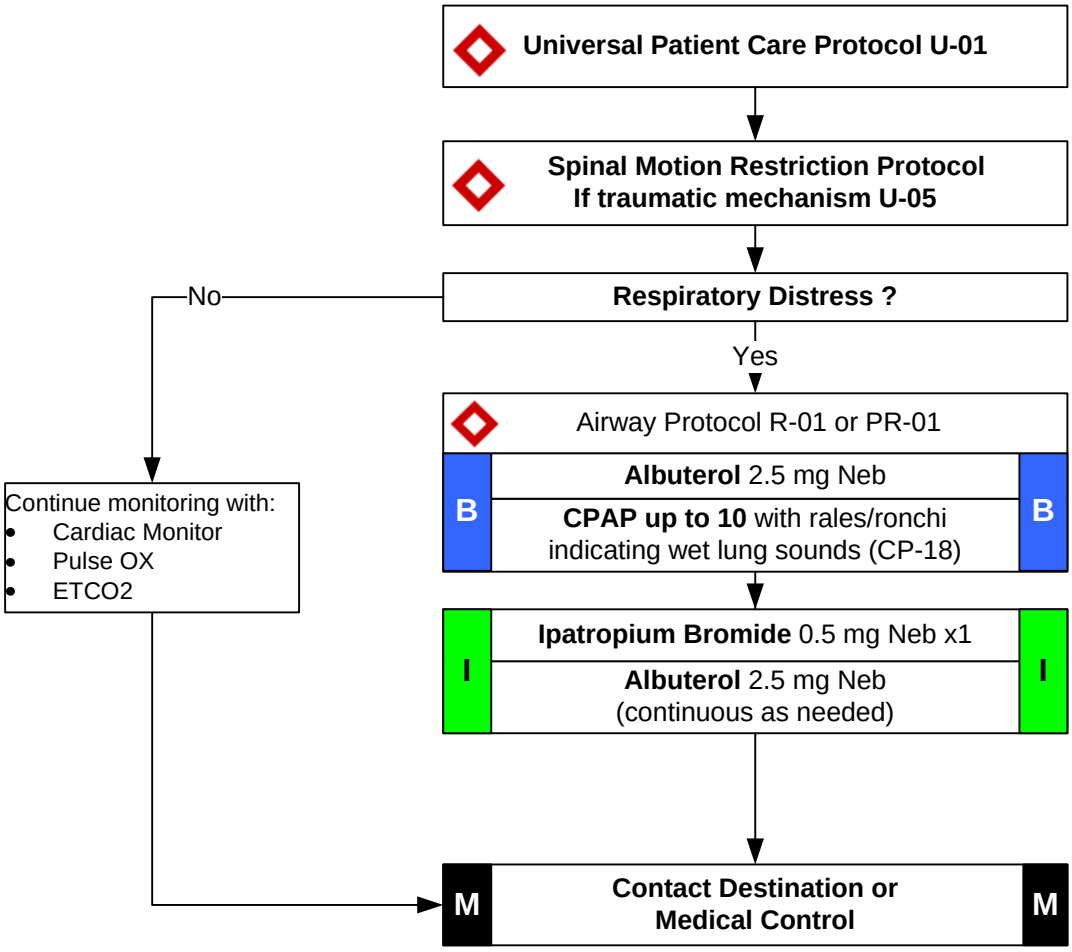
Drowning Adult/Pedi

History:	Signs and Symptoms:	Differential:
• Submersion in water regardless of depth • Possible history of trauma ie: diving board • Duration of immersion • Temperature of water • Fresh/Salt Water	• Unresponsive • Mental status changes • Decreased or absent vital signs • Vomiting • Coughing	• Trauma • Pre-existing medical problem • Pressure injury (diving) Barotrauma Decompression sickness



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Consider:
Hypothermia Protocol **M-12**

Pearls:

- **Criteria for resuscitation includes suspected arrest from cause other than submersion, patient submersion time less than 20 minutes from arrival of the first Public Safety entity until the patient is in a position for resuscitative efforts to be initiated. On-scene rescuers should consider conversion from rescue to recovery at 20 minutes unless the patient is a diver with an air source or a patient trapped with a potential air source. Final decision for transition from rescue to recovery mode rests with on-scene command.**
- SMR should be used when a suspected or known traumatic mechanism preceded the drowning.
- All victims should be transported for evaluation due to potential for worsening over the next several hours.
- Drowning is a leading cause of death among would-be rescuers. Allow appropriately trained rescuers to remove victims from areas of danger.
- With pressure injuries (decompression / barotrauma), if possible transport dive computer and/or dive logs with patient.
- Consider CPAP early if respiratory distress for any age if adequate mask seal can be established.

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Extremity Trauma Adult/Pedi

History:	Signs & Symptoms:	Differential:
• Type of injury • Mechanism: crush / penetrating / amputation • Time of injury • Open vs. closed fracture • Wound contamination • Medical history • Medications	• Pain, swelling • Deformity • Altered sensation / motor function • Diminished pulse / capillary refill • Decreased extremity temperature	• Abrasion • Contusion • Laceration • Sprain • Dislocation • Fracture • Amputation

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Universal Patient Care Protocol U-01

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Wound Care / Hemorrhage Control Procedure CP-66

Tourniquet Procedure PRN CP-64

Splinting Procedure PRN CP-59

↓

Pain Control Protocol M-16 or PM-06

↓

S

If amputation:
- **Do not delay transport for tissue retrieval**
- Rinse amputated part with sterile (saline or water).
- Wrap part in saline moistened gauze
- Place tissue into plastic bag or container.
- Place bag / container on ice

S

↓

M **Contact Destination or Medical Control** M

Pearls:
- Peripheral neurovascular status should be documented on all extremity injuries and before and after splinting procedures.
- If pulseless extremity a single attempt at realignment may be performed.
- In amputations, time is critical. Transport and notify medical control immediately, so that the appropriate destination can be determined.
- If an amputation is incomplete, splint affected digit or limb in physiologic position.
- Hip dislocations and knee and elbow fracture / dislocations have a high incidence of neuro-vascular compromise.
- Urgently transport any injury with vascular compromise.
- Blood loss may be concealed or not apparent with extremity injuries.
- Lacerations should be evaluated for repair as soon as possible after injury.

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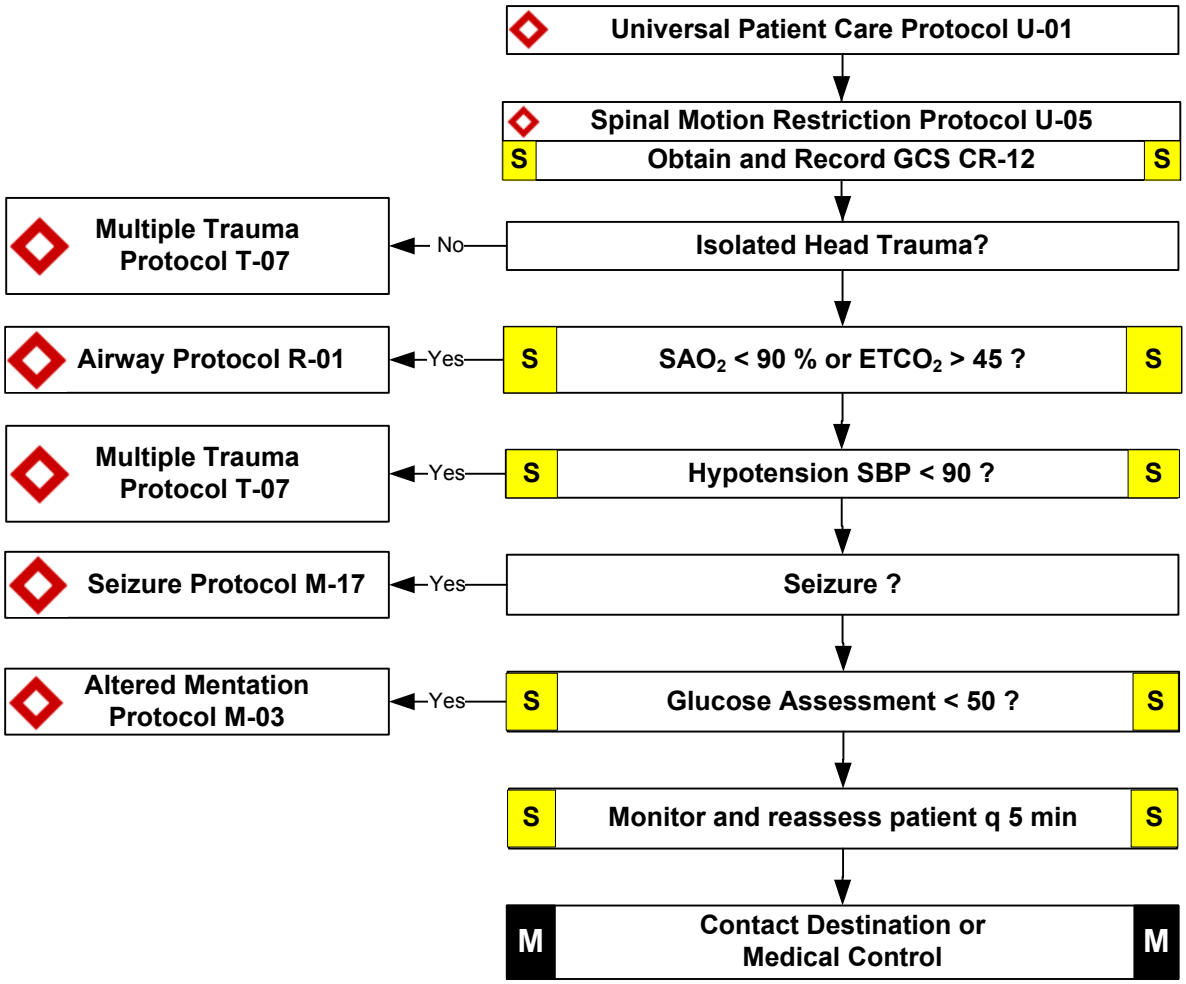
Head Trauma

History:	Signs and Symptoms:	Differential:
• Time of injury • Mechanism: blunt / penetrating • Loss of consciousness • Bleeding • Medical history • Medications • Allergies • Evidence of multi-trauma • Helmet use or damage to helmet	• Pain, swelling, bleeding • Altered mental status • Unconscious • Respiratory distress / failure • Vomiting • Significant mechanism of injury • Pupillary abnormalities • CSF leaking from ears, nose, mouth	• Skull fracture • Brain injury (concussion, contusion, hemorrhage, or laceration) • Epidural/subdural hematoma • Alcohol Intoxication • Subarachnoid/intracranial hemorrhage • Spinal injury • Abuse



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

- **If evidence of brain herniation (blown pupil, Cushings reflex, rapid decline in GCS, or bradycardia) and in absence of capnometer, hyperventilate the patient 20 – 24 breaths per minute. If available titrate to: adult $ETCO_2$ 30 - 35 mmHg.**
- Increased intracranial pressure (ICP) may cause hypertension and bradycardia (Cushing's Response).
- If hypotension consider spinal shock or additional occult injury as source.
- Hypotension is devastating to neurologic injury and should be aggressively treated.
- Consider Altered Mental Status Protocol
- The most important item to monitor and document is a change in the level of consciousness and GCS.
- Consider Restraints if necessary for patient's and/or personnel's protection per the Restraint Procedure.
- Concussions are periods of confusion or LOC associated with trauma which may have resolved by the time EMS arrives. Any documented loss of consciousness, prolonged confusion or mental status abnormality should be evaluated by a physician ASAP.

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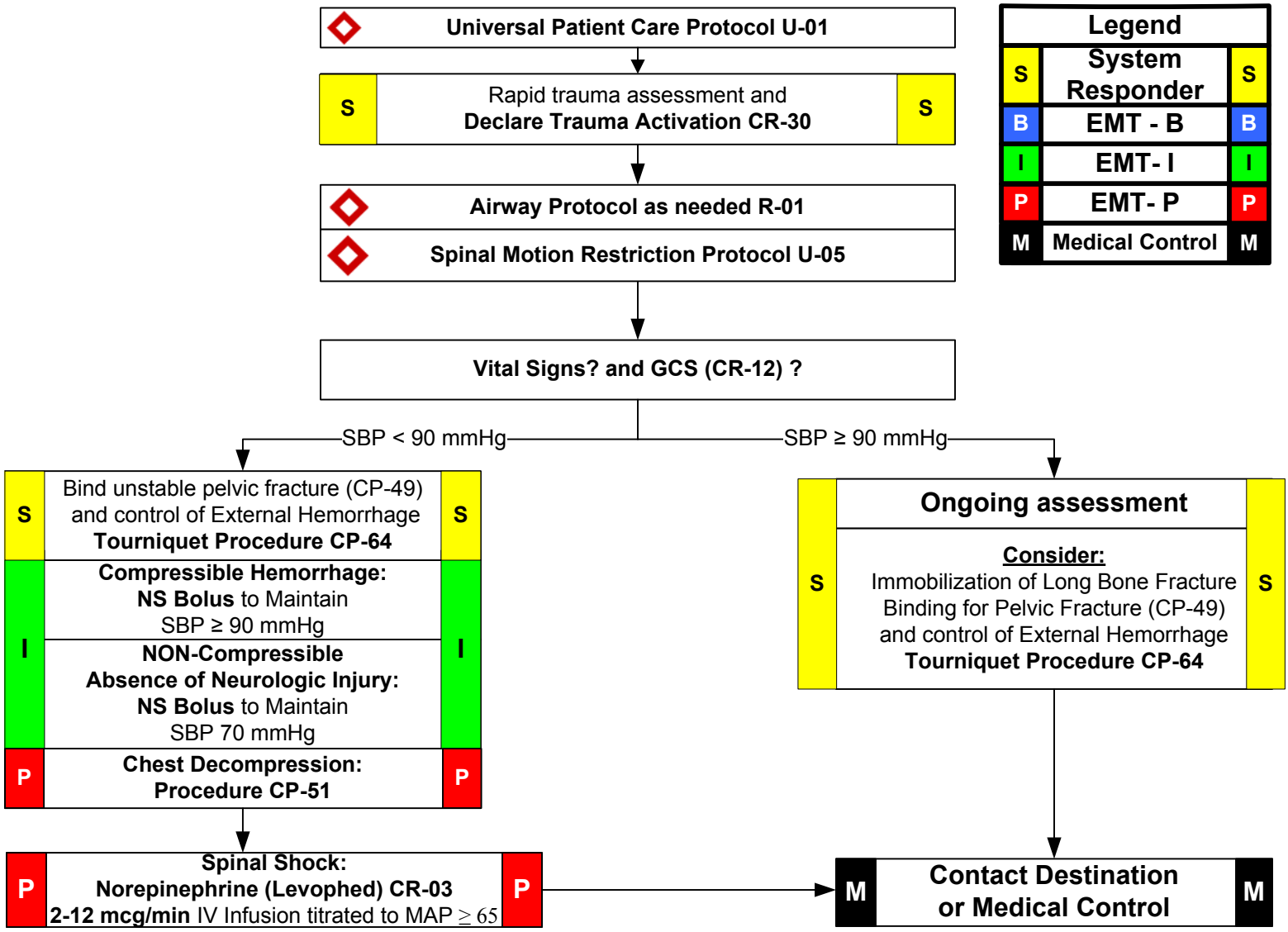
Multiple Trauma

History:	Signs & Symptoms:	Differential (Life threatening):
• Time and mechanism of injury • Damage to structure or vehicle • Location in structure or vehicle • Others injured or dead • Speed and details of MVC • Restraints / protective equipment • Past medical history • Medications	• Pain, swelling • Deformity, lesions, bleeding • Altered mental status or unconscious • Hypotension or shock • Cardiac Arrest	• Chest: Tension pneumothorax, Flail chest, Pericardial tamponade, Open chest wound, Hemothorax • Intra-abdominal bleeding • Pelvis / Femur fracture • Spine fracture / Cord injury • Head injury (see Head Trauma) • Extremity fracture / Dislocation • HEENT (Airway obstruction) • Hypothermia



Pearls:

- Consider Chest Decompression with signs of shock and diminished/absent breath sounds. If patient arrests perform bilateral decompression.
- See Regional Trauma Guidelines for criteria when declaring trauma activation.
- If patient meets Trauma Activation criteria interventions should be performed enroute. Minimize scene time.
- Severe bleeding from an extremity not rapidly controlled by direct pressure may necessitate the application of a tourniquet
- Record "Trauma Activation" in patient record.
- Permissive hypotension should be used in the absence of neurologic injury. **If suspected neurologic injury maintain SBP ≥ 90.**

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START/Jump START Triage Algorithm

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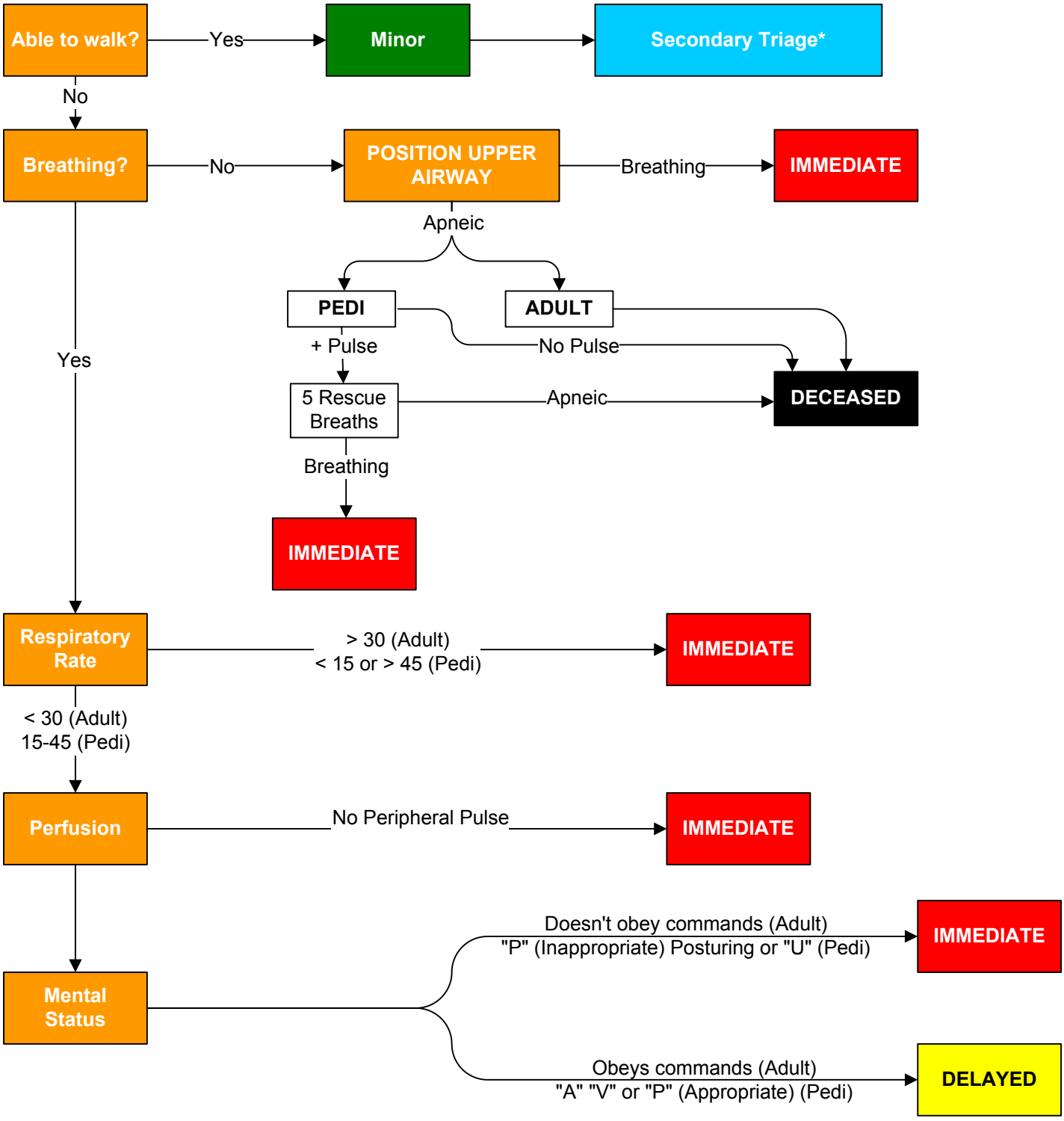

Pearls:

- *** Using the Jump Start Algorithm, first evaluate all children who did not walk under their own power.**
- All EMS providers are encouraged to use the Triage Algorithm any time there are more than 2-3 patients requiring evaluation, treatment or transport.

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Pediatric Burns

History: Type of exposure: **Electrical** (Low or High Voltage/ Lightning) **Thermal** (fire, steam, liquid, hot objects) **Chemical/Acid**, **Friction**, **Radiation**.

- Inhalation injury
- Time of Injury
- Past medical history, Rx, IMM
- Other trauma
- Loss of Consciousness

Signs & Symptoms:

- Burns, pain, swelling, abrasion
- Dizziness
- Loss of consciousness
- Hypotension/shock
- Airway compromise/distress singed facial or nasal hair, hoarseness / wheezing

Differential:

- Superficial (1°) red and painful
- Partial thickness (2°) blistering
- Full thickness (3°) painless and charred or leathery skin
- Respiratory Distress/Failure
- Dehydration
- Cyanide Poisoning
- CO Exposure

Legend

S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Universal Patient Care Protocol U-01

Pediatric Airway Protocol PR-01

S — Remove rings, bracelets, and other constricting items — S

Thermal

P — High Voltage Electrcal or Lighting Consider 12 Lead ECG — P

S — If burn < 10% body surface area Cool down the wound with Normal Saline or Sterile Water — S

S — Cover burn with a **Dry** sheet or dressings — S

I — High Voltage or > 10% BSA 2° or 3° Burns 20 mL/kg N/S IV Bolus — I

P — **Fentanyl 1 mcg/kg IV/IM/IN** every 5 min (Max total 200 mcg) with SBP >70 + (age in years x 2) mmHg Clinical Reference CR - 36 — P

Chemical

S — Remove clothing or expose area Brush off any dry chemicals or powder — S

Eye involvement ?
Eye Injury/Complaint Protocol M-08
(modify for Pedi Med. Doses)

S — Continuously flush area with water or NS — S

M — **Contact System Medical Director or Destination as needed** — M

Pearls:

- **Evaluate BSA : Use Lund Browder chart or use palm of patients hand. Palm = 1% BSA**
- **Critical Burns:**
  - >20% 2° and 3° body surface area (BSA) age > 10;
  - >10% BSA age < 10 or > 50;
  - 3° burns >5% BSA;
  - 2° and 3° burns to face, eyes, hands or feet or genitalia; electrical burns; respiratory burns; deep chemical burns;
  - Burns with extremes of age or chronic disease; and burns with associated major traumatic injury.
- Minor burns (< 5% BSA 2nd and 3rd) not complicated by airway compromise or trauma do not require transport to a trauma center.
- Potential CO & CN exposure should be treated with 100% oxygen.
- Circumferential burns to extremities are dangerous due to potential vascular compromise 2° to soft tissue swelling.
- Burn patients are prone to hypothermia - Never apply ice or cool burns that involve >10% body surface area.
- Do not overlook the possibility of multiple system trauma or child abuse with burn injuries.
- 2nd or 3rd degree burn >10% BSA – Fluid therapy following **Parkland Burn Formula for transports > 1hr.**
  Parkland Formula = NS 2 mL/kg x % TBSA 2nd or 3rd burn over the first 8 hours.
- ETCO2 if multiple doses of Narcotic Medication administered

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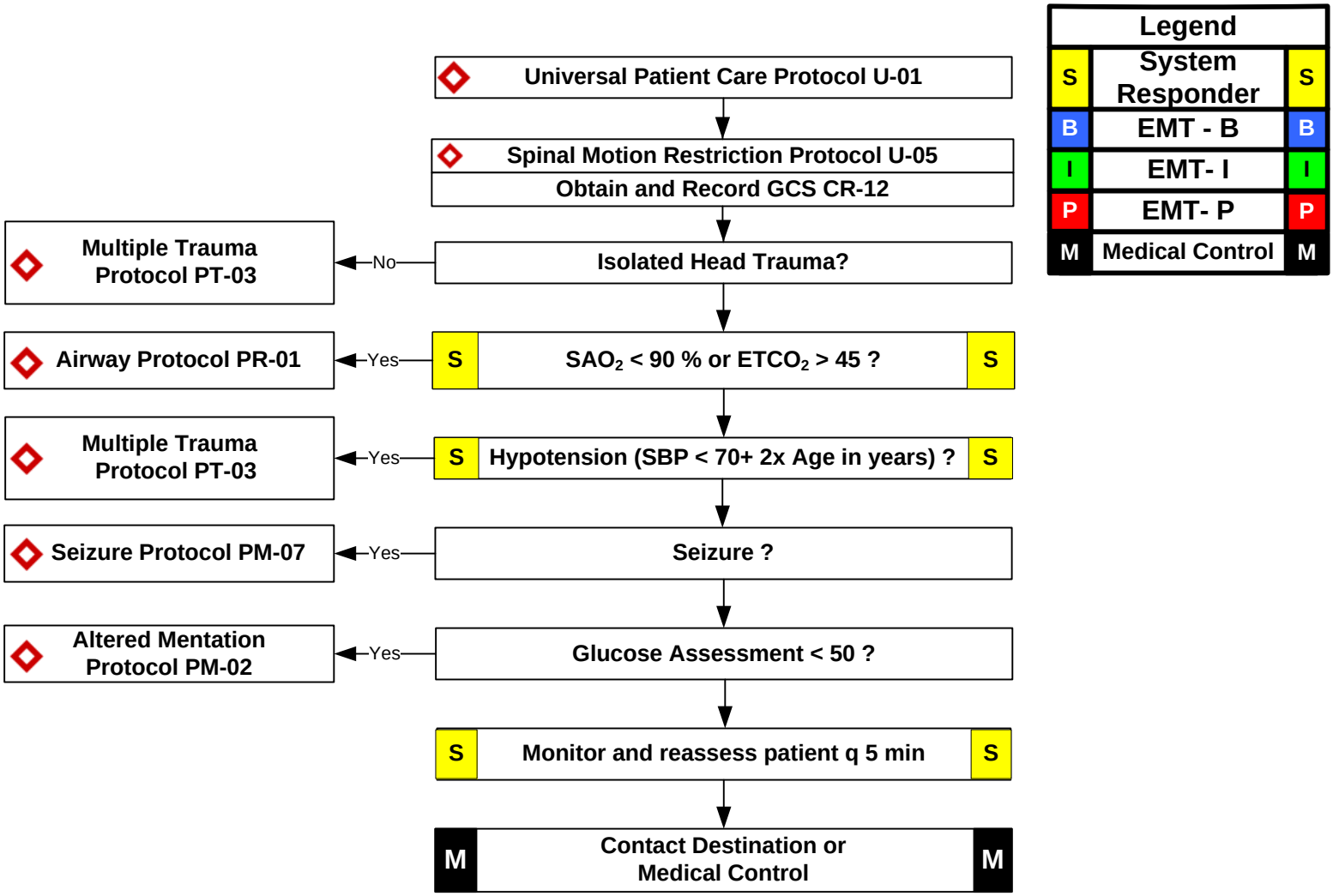
Pediatric Head Trauma

Histroy	Signs and Symptoms:	Differential:
• Time of injury • Mechanism: blunt / penetrating • Loss of consciousness • Bleeding • History of bleeding disorders • Medications • Evidence of multi-trauma • Protective equipment • Helmet use or damage to helmet	• Pain, swelling, bleeding • Altered mental status • Unconscious • Respiratory distress / failure • Vomiting • Major traumatic mechanism of injury • Seizure	• Skull fracture • Brain injury (Concussion, Contusion, Hemorrhage or Laceration) • Epidural hematoma • Subdural hematoma • Subarachnoid hemorrhage • Spinal injury • Abuse



Pearls:

- **If evidence of herniation (blown pupil, decorticate / decerebrate posturing, bradycardia). Attach ETCO2 when it becomes available on scene and titrate to: 30-35mmHg.** ETCO2 < 30 is associated with poor neurologic outcomes.
- Increased intracranial pressure (ICP) may cause hypertension and bradycardia (Cushing's Response).
- Hypotension usually indicates injury or shock unrelated to the head injury.
- It is essential to monitor and document baseline mental status and any change in the level of consciousness.
- Any loss of consciousness should be evaluated by a physician as soon as possible.
- **Fluids and Medication titrated to maintain a SBP >70 + (age in years x 2) mmHg**

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Pediatric Multiple Trauma

History:
- Time and mechanism of injury
- Damage to structure or vehicle
- Location in structure or vehicle
- Others injured or dead
- Speed and details of MVC
- Restraints / protective equipment
- Past medical history
- Medications

Signs & Symptoms:
- Pain, swelling
- Deformity, lesions, bleeding
- Altered mental status or unconscious
- Hypotension or shock
- Arrest

Differential (Life threatening):
- Chest: Tension pneumothorax, Flail chest, Pericardial tamponade, Open chest wound, Hemothorax
- Intra-abdominal bleeding
- Pelvis / Femur fracture
- Spine fracture / Cord injury
- Head injury (see Head Trauma)
- Extremity fracture / Dislocation
- Neck Trauma (Airway obstruction)
- Hypothermia

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Universal Patient Care Protocol U-01

↓

S — Rapid trauma assessment and **Declare Trauma Activation CR-30** — S

↓

Airway Protocol as needed PR-01

Spinal Motion Restriction Protocol U-05

↓

Vital Signs? and GCS (CR-12) ?

Hypotension

Yes →

S — Bind unstable pelvic fracture (CP-49) and control of External Hemorrhage — S

↓

I — **NS 20mL/kg IV** May repeat 10mL/kg IV — I

P — **Chest Decompression Procedure CP-51** — P

Continued Hypotension? →

No →

S — **Ongoing assessment**

Consider:
Immobilization of Fractures
Pelvic Fracture (CP-49)
and control of External Hemorrhage — S

M — **Contact Destination or Medical Control Suggest:**
Normal Saline bolus 20 ml/kg IV
and/or
Epinephrine infusion 0.1-1 mcg/kg/min
(Clinical Reference CR-23) — M

Pearls:
- **If patient meets Trauma Activation criteria interventions should be performed enroute. Minimize scene time.**
- Consider Chest Decompression with signs of shock and injury to torso and evidence of tension pneumothorax.
- See Regional Trauma Guidelines when declaring Trauma Activation.
- Severe bleeding from an extremity not rapidly controlled with direct pressure may necessitate the application of a tourniquet
- Record "Trauma Activation" in patient record.
- Permissive hypotension should be used in the absence of neurologic injury. **If suspected neurologic injury maintain age appropriate SBP.**
- Do not overlook the possibility of child abuse.

Obstetrical and Pediatric (<37 kg) Medicine Protocols

Version 020415 (MD 14-09)

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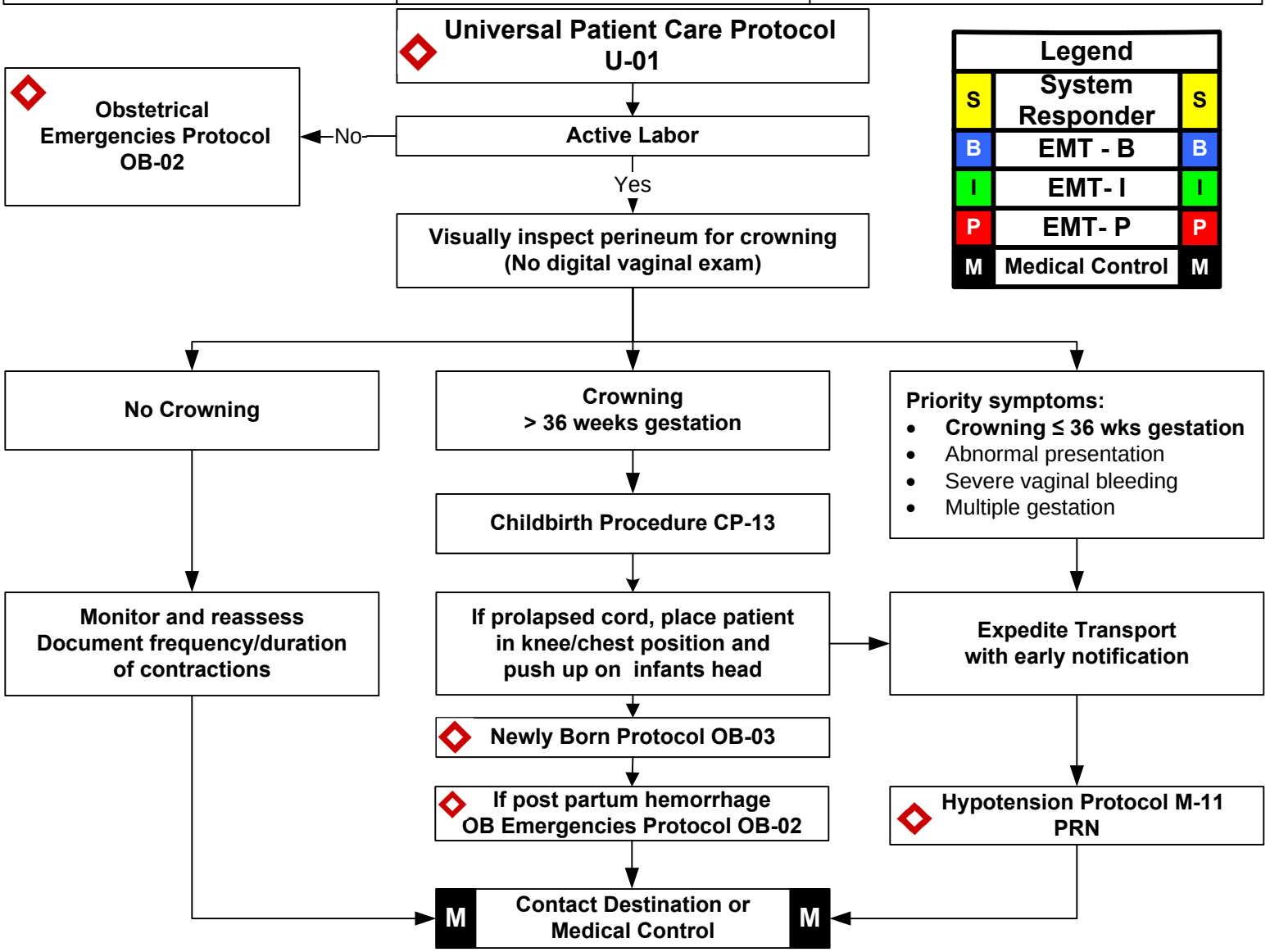
Childbirth / Labor

History:
- Due date or LMP
- Time contractions started / how often
- Rupture of membranes
- Time / amount of any vaginal bleeding
- Sensation of fetal activity
- Past medical and delivery history
- Gravida/Para Status
- Medications
- High Risk pregnancy (known)

Signs & Symptoms:
- Episodic pain
- Vaginal discharge or bleeding
- Crowning or urge to push
- Meconium

Differential:
- Abnormal presentation
  - -- Buttock
  - -- Foot
  - -- Hand
- Prolapsed cord
- Placenta previa
- Abruptio placenta
- Premature labor



Pearls:
- Document all times (delivery, contraction frequency, and length). Record APGAR at 1 minute and 5 minutes after birth.
- If maternal seizures: refer to the Obstetrical Emergencies Protocol. Ecclampsia can occur up to 2 months post partum.
- After delivery, allowing child to nurse and massaging the uterus (lower abdomen) will promote uterine contraction and help to control postpartum bleeding.
- Post partum hemorrhage defined as blood loss > 1000mL or > 500mL with signs/symptoms. The perineum should be checked for bleeding from vaginal tears. Bleeding should be controlled by direct pressure over the laceration.
- The most common cause of post partum hemorrhage is uterine atony due to prolonged labor, or multiple gestations

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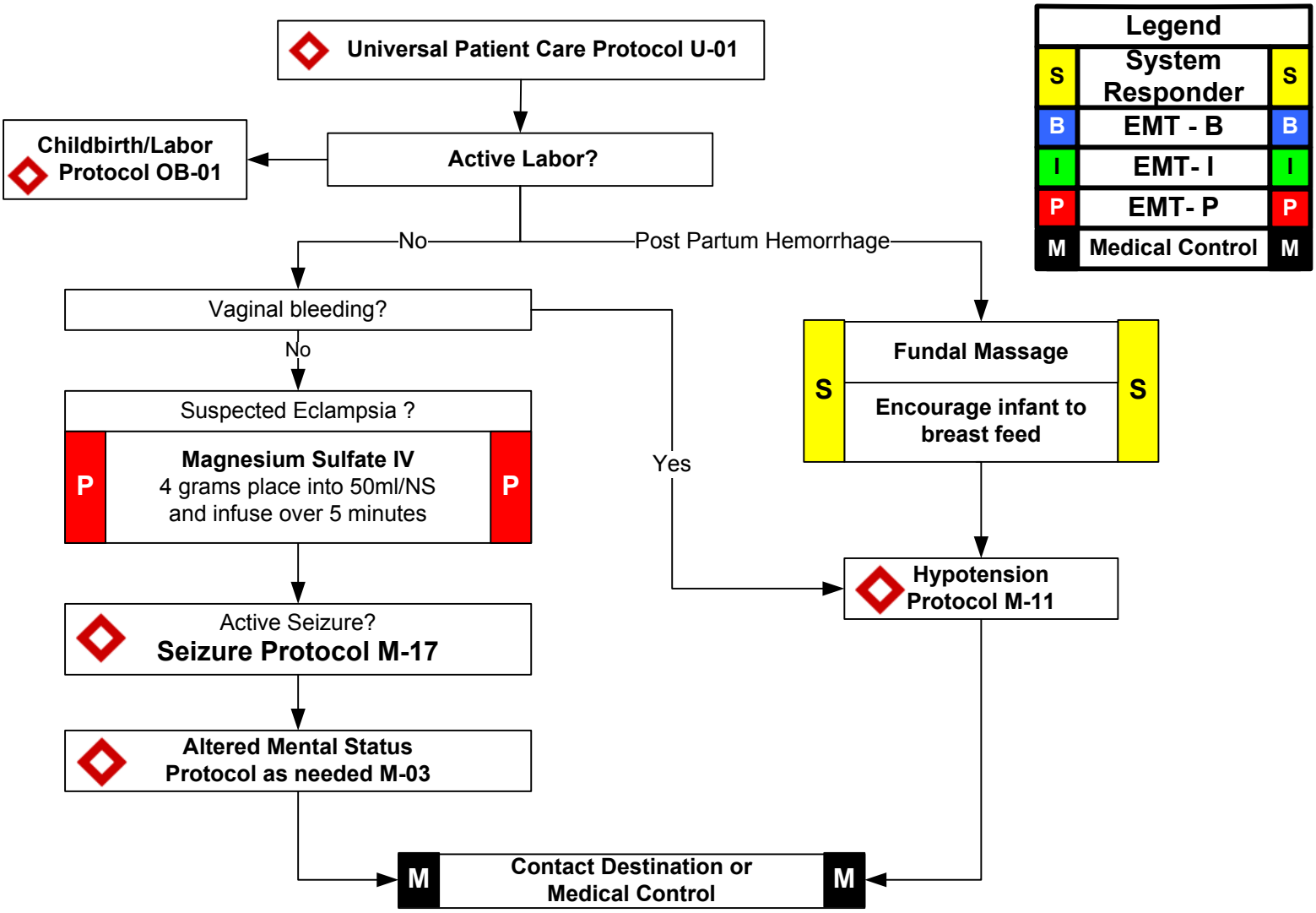
Obstetrical Emergency

History:	Signs and Symptoms:	Differential:
• Past medical history • Hypertension meds • Prenatal care • Prior pregnancies / births • Gravida / Para	• Vaginal bleeding • Abdominal pain • Seizures • Hypertension • Severe headache • Visual changes • Edema of hands and face	• Pre-eclampsia / Eclampsia • Placenta previa • Placenta abruptio • Spontaneous abortion



Pearls:

- **Eclamptic seizures may occur up to 2 months post partum. Always consider in pregnant/recently pregnant seizing patient.**
- Severe headache, vision changes, edema, or RUQ pain may indicate preeclampsia.
- In the setting of pregnancy, hypertension is defined as a SBP greater than >140 or a DBP > 90, or relative increase of 30 systolic and 20 diastolic from the patient's normal (pre-pregnancy) blood pressure.
- Ask patient to quantify bleeding - number of pads used per hour.
- Any pregnant patient involved in a MVC should be seen immediately by a physician for evaluation and fetal monitoring.
- Magnesium may cause hypotension and decreased respiratory drive, monitor closely.
- Post partum hemorrhage defined as blood loss > 1000mL or greater than 500mL with signs/symptoms. 500mL blood loss is commonly seen in uncomplicated vaginal deliveries without signs or symptoms. The perineum should be checked for bleeding from vaginal tears which may be mistaken for uterine bleeding. Bleeding should be controlled by direct pressure over the laceration.
- The most common cause of post partum hemorrhage is uterine atony due to prolonged labor or multiple gestations
- If > 20 weeks, consider left lateral position.

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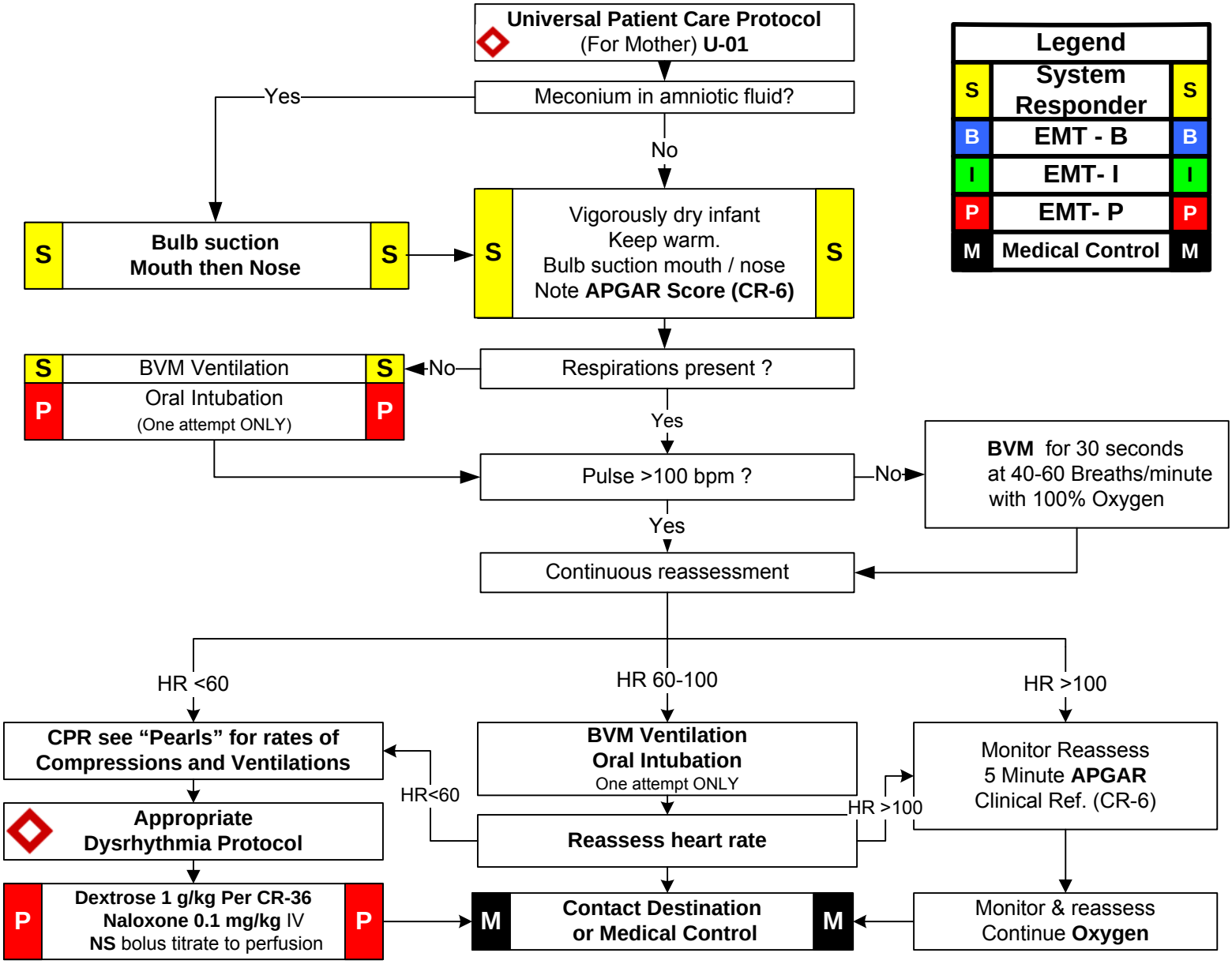
Newly Born

History:	Signs and Symptoms:	Differential:
• Due date and gestational age • Multiple gestation (twins etc.) • Meconium • Delivery difficulties • Congenital disease • Medications (maternal) • Maternal risk factors - substance abuse - smoking	• Respiratory distress • Peripheral cyanosis or mottling (normal) • Central cyanosis (abnormal) • Altered level of responsiveness • Bradycardia	• Airway failure Secretions Respiratory drive • Infection • Maternal medication effect • Hypovolemia • Hypoglycemia • Congenital heart disease • Hypothermia



Pearls:

- Non vigorous infant as evidenced by poor muscle tone, poor/absent respiration and heart rate < 100 bpm
- **If power suction is used, negative pressure must not exceed 100mmHg.**
- **<u>CPR: Birth to 5 days 120 compressions with asynchronous ventilations at 30 per minute.</u>**
- It is extremely important to keep infant warm
- Maternal sedation or narcotics will sedate infant (Naloxone effective but may precipitate seizures).
- Consider hypoglycemia in infant and administer **Dextrose with BGL < 50, use volume control device (IV Burette) for Infusion.**
- Document 1 and 5 minute Apgar in PCR. (Clinical Reference CR-06)

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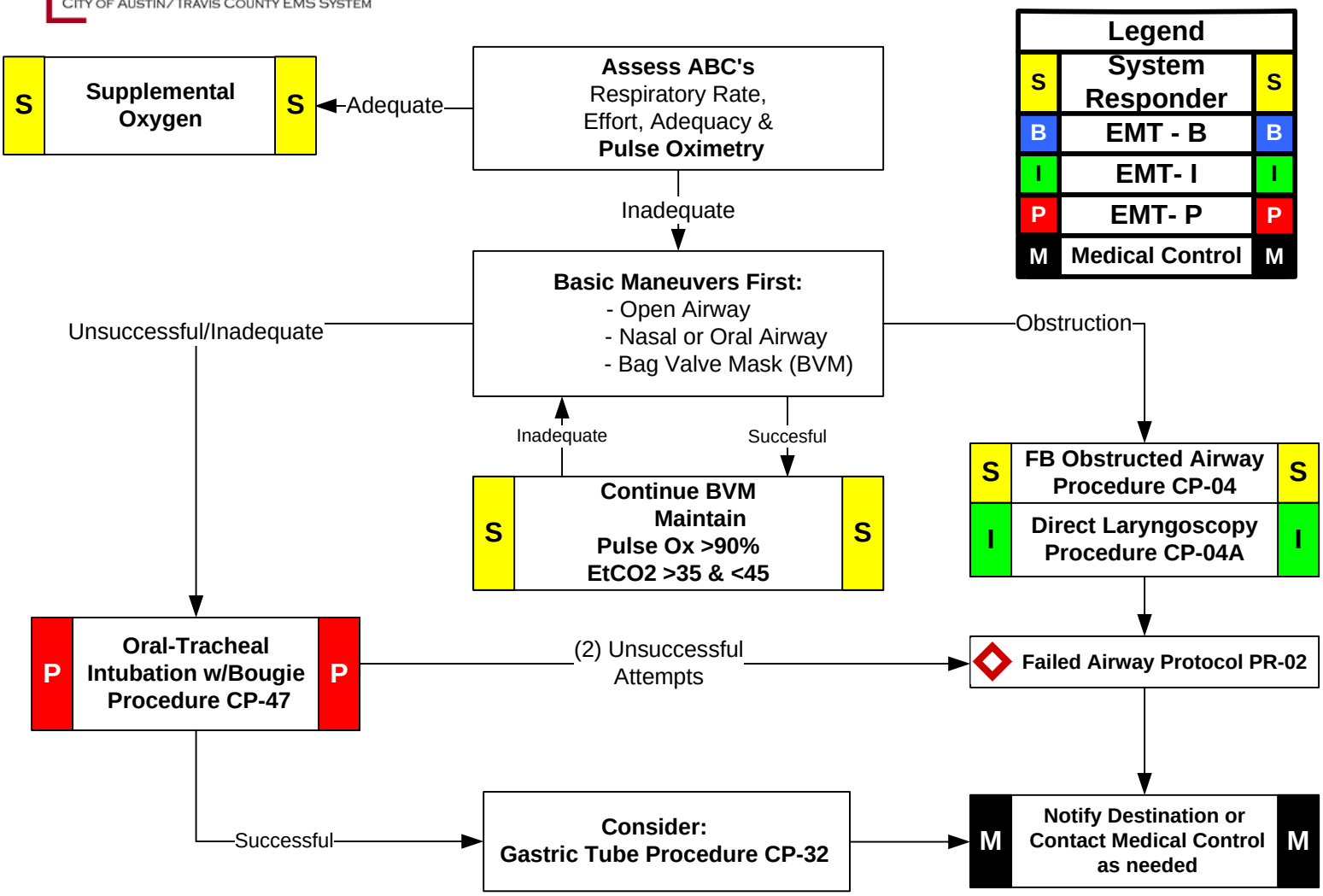
Airway, Pediatric



Pearls:

- **For this protocol, pediatric is defined as age <10 yrs or less than 37 Kg or any patient which can be measured within the Pedia Tape.**
- **The majority of pediatric airways are managed with basic interventions. Use only the interventions needed to deliver adequate oxygenation and ventilation.**
- Capnometry (color) or capnography is mandatory with all methods of intubation. Document results.
- Continuous capnography (EtCO2) is required for the monitoring of all patients with an advanced airway.
- If an effective airway is being maintained by BVM with continuous pulse oximetry values of > 90, it is encouraged to continue with basic airway measures instead of Intubation.
- An Intubation attempt is defined as passing the laryngoscope blade or endotracheal tube past the teeth.
- Ventilatory rate should be age appropriate to maintain a ETCO2 between 35 and 45. Avoid hyperventilation.
- Sellick's and or BURP maneuver should be used to assist with difficult intubations.
- In deteriorating head trauma and/or evidence of herniation, ventilations should be done to maintain an **ETCO2 of 30 - 35 mmHg.**
- Secure the endotracheal tube.

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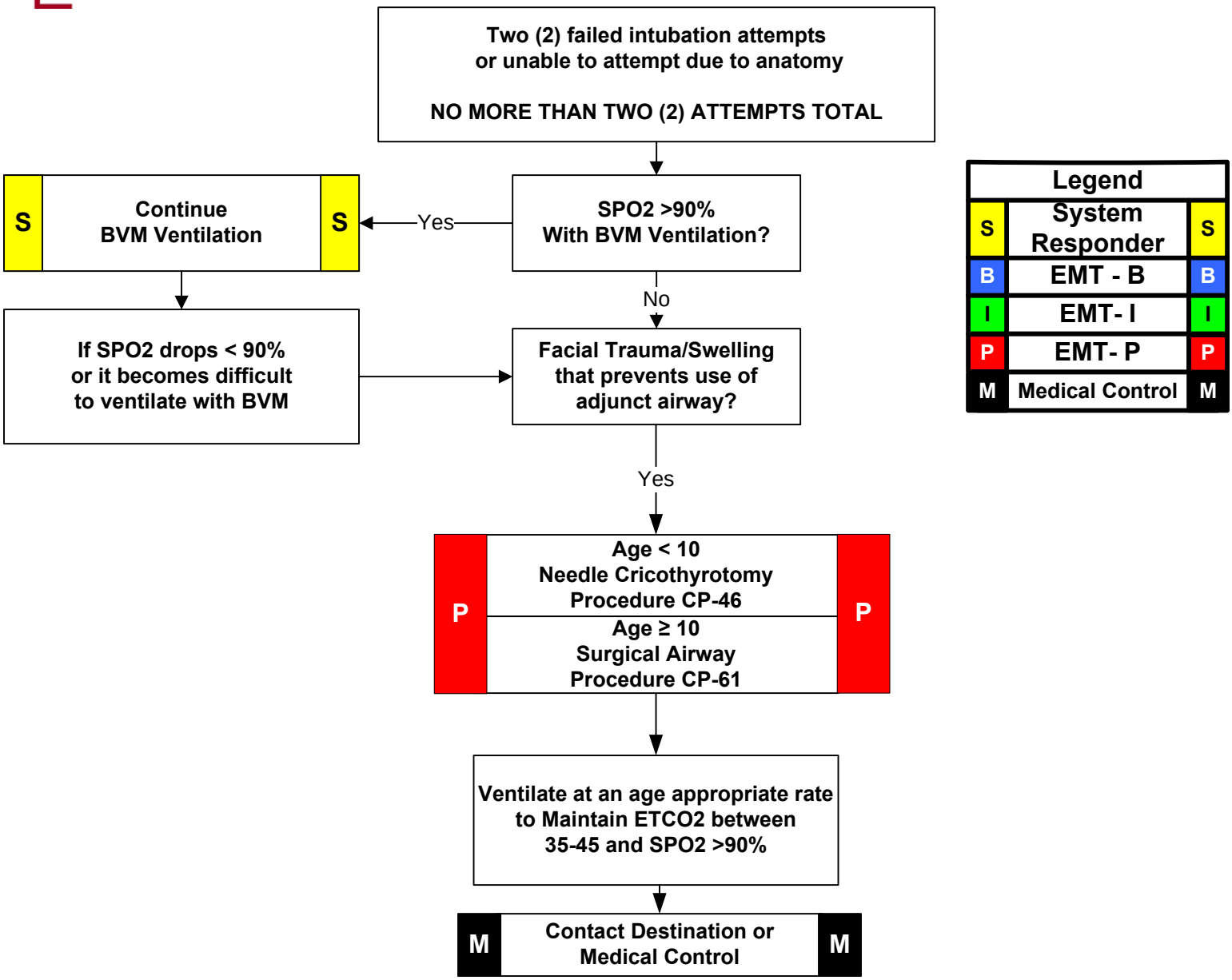
Airway, Pediatric-Failed



Pearls:

- **This protocol is only for use in the patients with an Age <10 or patient fits the Pedia Tape.**
- **The majority of pediatric airways are managed with basic interventions. Use only the interventions needed to deliver adequate oxygenation and ventilation.**
- Capnography or Capnometry ($EtCO_2$) is mandatory with all Advanced airways. Document Results.
- If an airway is being maintained by BVM with Pulse Oximetry >90%, it is acceptable to maintain basic airway measures instead of using an ET.
- A secure airway is when the patient has appropriate oxygenation and ventilation.
- An intubation verification form is required on all patients where an ETT, or surgical airway is used.
- Maintain C-Spine in those patients with suspected spinal injury.
- Sellick's and or BURP methods should be used to assist with difficult intubations.
- Head trauma patients with evidence of herniation should be ventilated to maintain **$EtCO_2$ of 30-35 mmHg**
- If first ET attempt is unsuccessful consider:
- - Different laryngoscope blade - Different ETT size - Change Cricoid Pressure -Patient/Provider Position
- Continuous pulse oximetry should be used and documented.
- Continuous $EtCO_2$ in all patients in respiratory failure.
- Notify Destination regarding patient's failed airway.

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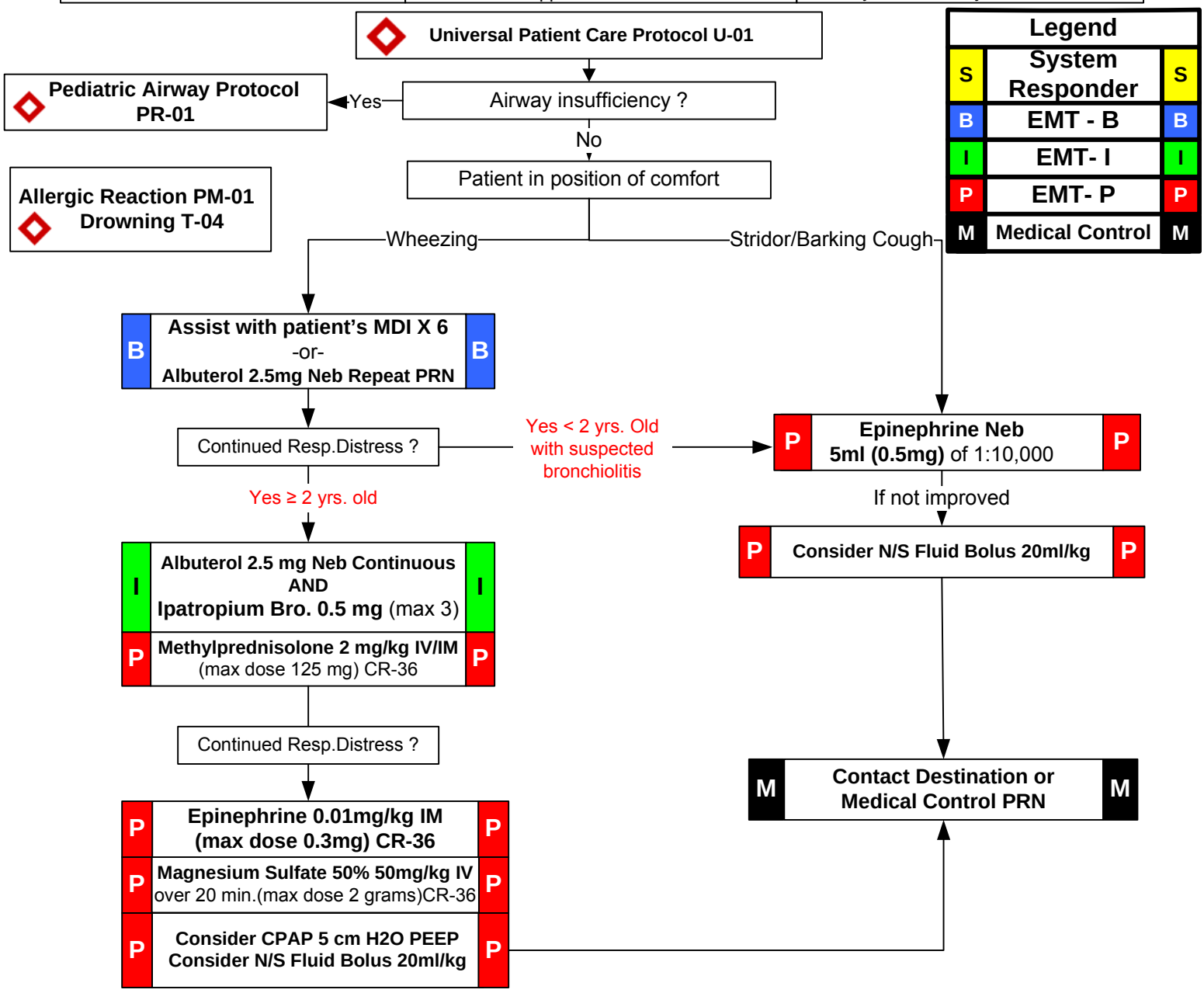
Pediatric Respiratory Distress

History:
- Time of onset
- FBAO
- Fever or infection
- Sick contacts
- Asthma
- Treatment (oxygen, nebulizer)
- Medications steroids, inhalers
- Toxic exposure
- Trauma

Signs & Symptoms:
- Shortness of breath
- Pursed lip breathing
- Decreased ability to speak
- Increased respiratory rate and effort
- Wheezing, rhonchi, rales, stridor
- Use of accessory muscles
- Fever, cough
- Tachycardia
- Anxious appearance

Differential:
- Asthma/Anaphylaxis
- Aspiration/Foreign body
- Drowning
- Pneumonia/Broncholitis
- Croup/Epiglottis
- Congenital heart disease
- Medication or Toxin
- Trauma
- Hydrocarbon Injestion



Pearls:
- A quiet chest is indicative of severe bronchospasm.
- Patient respiratory status must be reassessed after each 2.5 mg Albuterol to determine need for additional dosing.
- Place Magnesium Sulfate 50% 50mg/kg into 50ml/NS to infuse over 20 minutes. Using 60gtts set = 150 gtts/min drip rate monitor for drop in BP. See **CR-36**
- CPAP if continued respiratory distress and if adequate mask seal can be established.

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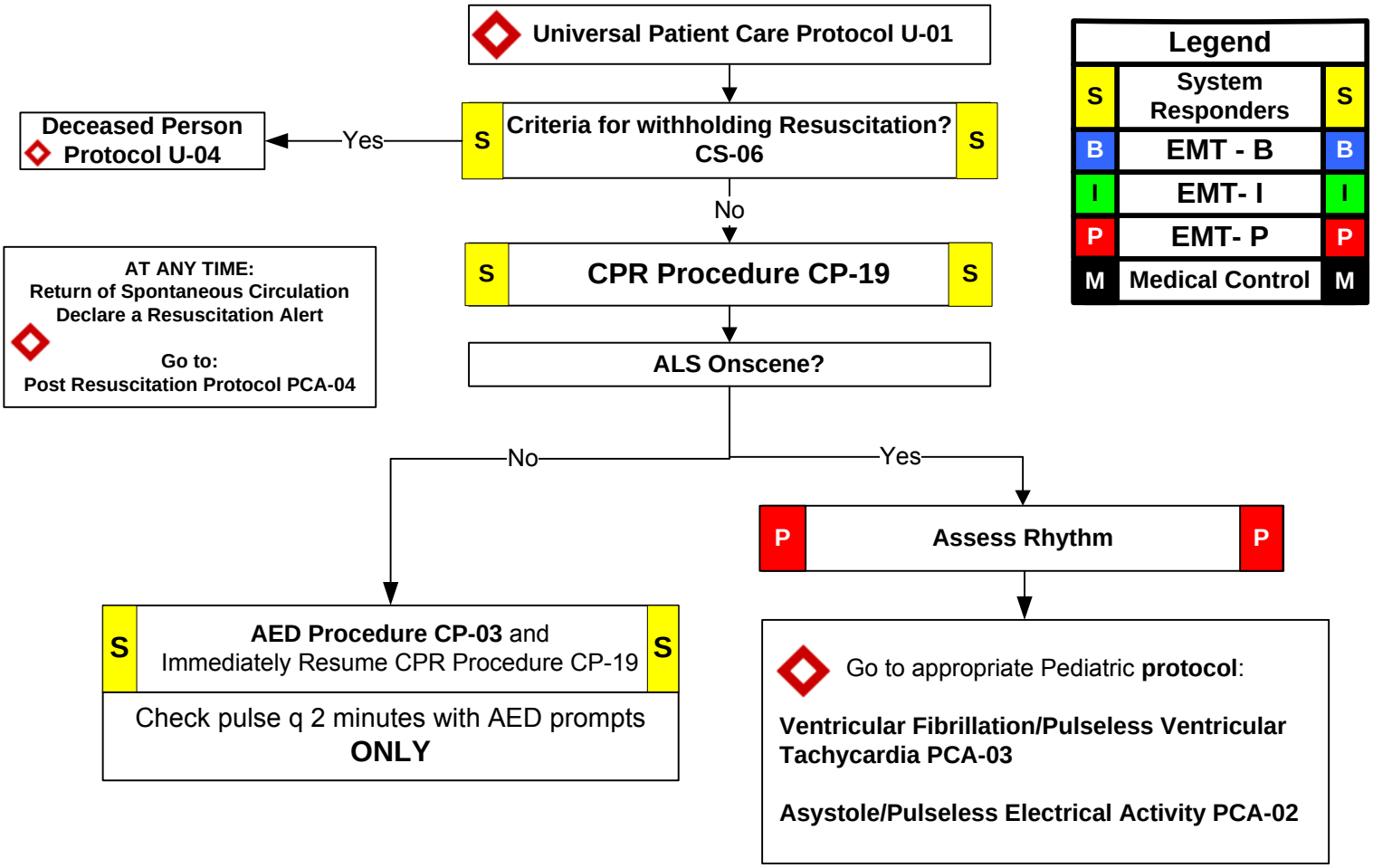
Pediatric Cardiac Arrest

History:	Signs and Symptoms:	Differential:
• Events leading to arrest • Estimated downtime • Past medical history • Medications • Existence of terminal illness • FBAO	• Unresponsive • Abnormal breathing (gasps) • Pulseless • Signs of lividity or rigor	• Medical vs. Trauma • VF vs Pulseless VT • Asystole • PEA • Consider H's and T's



Pearls:

- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.
- Reassess airway frequently and after every patient move.
- Immediate and Adequate compressions with timely defibrillation are the keys to success.
- Do not interrupt compressions for airway placement, ventilation, medication administration.
- Perform Cardiac Arrest Checklist during resuscitation.

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Pediatric Asystole/PEA

History:	Signs & Symptoms:	Differential:
• Events leading to arrest • Estimated downtime • Past medical history • Medications • Existence of terminal illness • FBAO • Hypothermia	• Unresponsive • Cardiac Arrest • Signs of lividity or rigor	• Respiratory failure • Foreign body • Hyperkalemia • Infection (croup, epiglotitis) • Hypovolemia (dehydration) • Congenital heart disease • Trauma • Tension pneumothorax • Hypothermia • Toxin or medication • Hypoglycemia • Acidosis

Pediatric Cardiac Arrest Protocol PCA-01

↓

CPR Procedure CP-19

Pediatric Airway Protocol PR-01

P | **Epinephrine 0.01 mg/kg IV/IO**
(0.1 mL/kg of 1:10,000) max 1mg
Repeat every 3-5 min (CR-36) | P

↓

P | **Identify/Treat Correctable Causes** | P

↓

ROSC?

NO → **Consider: Criteria for Discontinuation Standard CS-8** → M | **On Call System Medical Director** | M

Yes → **Post Resuscitation Protocol PCA-04**

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Look for treatable causes:
Hypoxia
Hypothermia
Hypovolemia
(NS 20mL/kg IV/IO may repeat x 1)
Hypoglycemia
1g/kg Dextrose Infusion
Per Chart CR - 36
D10W Premixed 250mL Bag,
Titrate to patient condition and response.
Acidosis
(Sodium Bicarbonate 1meq/kg IV/IO)
Hyperkalemia
(Sodium Bicarbonate 1meq/kg IV/IO)
OD Calcium channel/Beta blocker
(Epinephrine infusion 0.1mcg/kg/min)
(Glucagon 0.1mg/kg IV/IO max 1mg)
Tension Pneumothorax
(Chest Decompression)
Refer to CR-36 for all Pedi Dosing

Pearls:
- In order to be successful in pediatric arrests, a cause must be identified and corrected.
- Respiratory arrest is a common cause of cardiac arrest. Unlike adults early airway intervention is critical.
- In most cases pediatric airways can be managed by basic interventions.
- **Effective CPR is critical 1) Push hard and fast at appropriate rate 2) Ensure full chest recoil 3) Minimize interruptions in CPR. Pause CPR< 10 seconds to verify rhythm.**
- **Use volume control device (IV Burette) for Dextrose and Fluid infusions**

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Pediatric V-Fib/Pulseless V-Tach

History:	Signs & Symptoms:	Differential:
• Events leading to arrest • Estimated downtime • Past medical history • Medications • Existence of terminal illness • FBAO • Hypothermia	• Unresponsive • Cardiac Arrest	• Respiratory failure • Foreign body • Hyperkalemia • Infection (croup, epiglotitis) • Hypovolemia (dehydration) • Congenital heart disease • Trauma • Tension pneumothorax • Hypothermia • Toxin or medication • Hypoglycemia • Acidosis

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pediatric Cardiac Arrest Protocol PCA-01

↓

S — **Defibrillation Procedure CP-03 or CP-42:**
AED or Defibrillate @ 2 J/kg (CR-22)
resume CPR immediately — S

↓

Pediatric Airway Protocol PR-01

P — **Epinephrine 0.01 mg/kg IV/IO**
(0.1 mL/kg of 1:10,000) max 1mg
Repeat every 3-5 min (CR-36) — P

↓

S — **Resume CPR Procedure CP-19**
AED or Defibrillate q 2 minutes @ 4 J/kg,(CR-22)
resume CPR Procedure immediately — S

↓

P — **Amiodarone 5 mg/kg** IV/IO (max 300mg)
may repeat x1 (max 2nd dose 150mg)CR-36 — P

↓

P — **If VF/VT refractory to Amiodarone:**
Lidocaine 1mg/kg IV q 5 min
(Max 3 mg/kg) CR-36
IF torsades de pointes:
Magnesium Sulfate 50% 50 mg/kg slow IV/IO
May repeat same dose q- 5 minutes until a maximum total dose of 2 grams. CR-36 — P

ROSC YES → Post Resuscitation Protocol PCA-04

ROSC NO → M — **ON Call System Medical Director** — M

Pearls:

- In order to be successful in pediatric arrests, a cause must be identified and corrected.
- Respiratory arrest is a common cause of cardiac arrest. Unlike adults early ventilation intervention is critical.
- In most cases pediatric airways can be managed by basic interventions.
- **Consider Epinephrine infusion 0.1mcg/kg/min if arrest is from beta/calcium channel blocker OD or anaphylaxis.**
- **Effective CPR is critical 1) Push hard and fast at appropriate rate 2) Ensure full chest recoil 3) Minimize interruptions in CPR.**

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Post Resuscitation

History:	Signs & Symptoms:	Differential:
• Respiratory Arrest • Cardiac Arrest	• Return of pulse	• Continue to address specific differentials associated with original dysrhythmia

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Declare a "Resuscitation Alert" ASAP after ROSC.

Repeat Primary Assessment,
and **remove ITD** if not already done so

↓

S **Continue ventilatory support** S
-SAO2 > 94%
- ETCO2 >30
- Age appropriate Resp Rate
DO NOT HYPERVENTILATE

◇ **Airway Protocol PR-01**

↓

P **Cardiac Monitor & 12 Lead ECG** P

↓

Hypotensive → ◇ **Hypotension Protocol PM-04**

Significant Ectopy → ◇ **Go to Appropriate Protocol**

Bradycardia → ◇ **Bradycardia Protocol PC-01**

↓

◇ If arrest reoccurs, revert to appropriate **Protocol** and/or initial successful treatment

↓

M **Notify Destination or Contact Medical Control** M

Pearls:
- Hyperventilation is a significant cause of hypotension and cardiac arrest in the post resuscitation phase it must be avoided at all cost.
- Most patients immediately post resuscitation will require ventilatory assistance.
- The condition of post-resuscitation patients fluctuates rapidly and continuously, and they require close monitoring. Appropriate post resuscitation management can best be planned in consultation with medical control.
- Common causes of post-resuscitation hypotension include hyperventilation, hypovolemia, pneumothorax, and medication reaction to ALS drugs.
- Significant ectopy is defined as a dysrhythmia that meets treatment criteria as part of another protocol (ie SVT, V-Tach)

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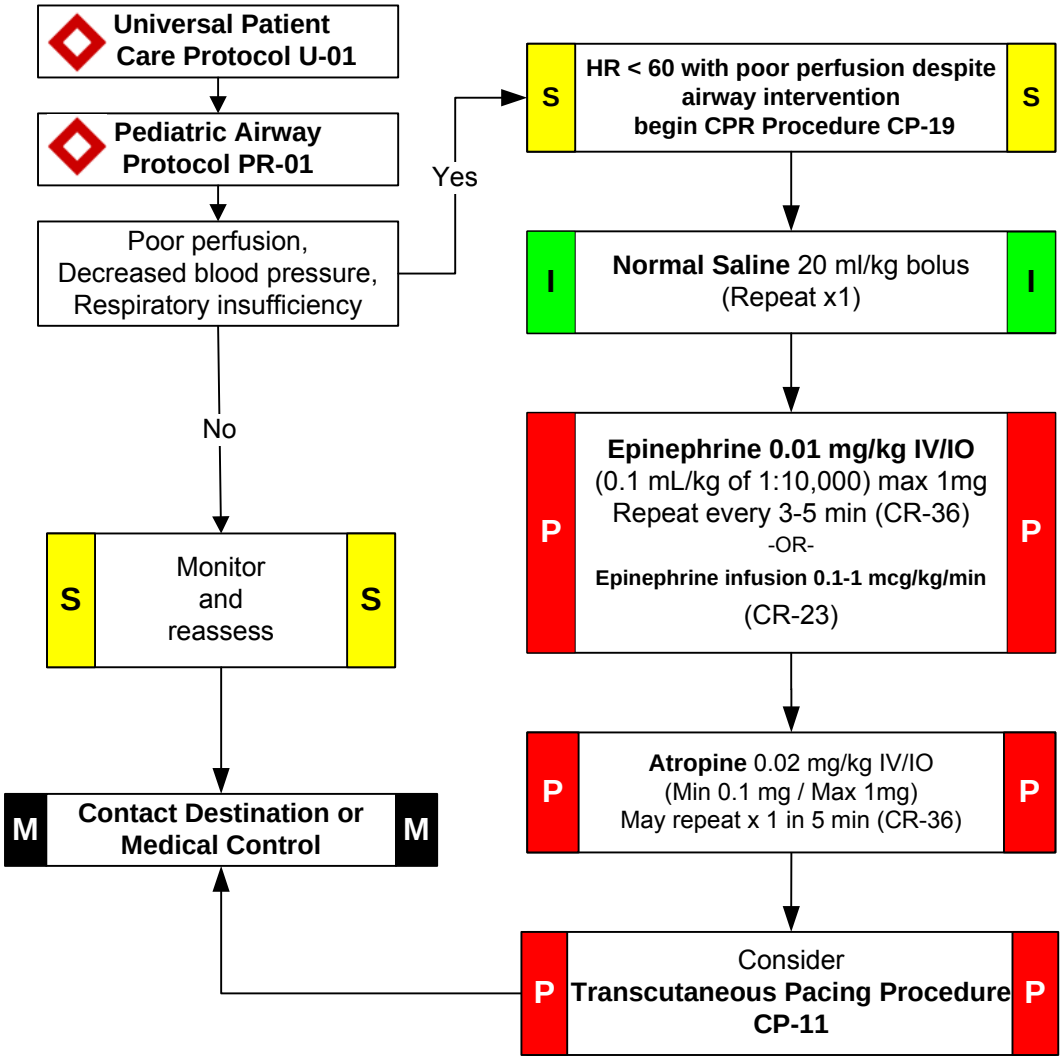
Pediatric Bradycardia

History:
- Past Medical History
- Medications
- Events Leading to Current Status

Signs & Symptoms:
- HR <60/min with hypotension, acute altered LOC, chest pain, CHF, Sz, syncope or shock secondary to bradycardia
- Altered LOC
- Shock/Hypotension
- Syncope

Differential:
- Respiratory effort
- Respiratory obstruction
- Foreign body
- Secretions
- Croup
- Epiglotitis
- Hypovolemia
- Hypothermia
- Hypoxia
- Infection / Sepsis
- Medication or Toxin
- Hypoglycemia
- Trauma



Legend		
S	System Responder	S
B	EMT - B	B
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P	EMT- P	P
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Look for treatable causes:
Hypoxia
Hypothermia
Hypovolemia
(NS 20mL/kg IV/IO may repeat x 1)
Hypoglycemia
1g/kg Dextrose Infusion
Per Chart CR - 21
D10W Premixed 250mL Bag,
Titrate to patient condition and response.
Acidosis
(Sodium Bicarbonate 1meq/kg IV/IO)
Hyperkalemia
(Sodium Bicarbonate 1meq/kg IV/IO)
OD Calcium channel/Beta blocker
(Epinephrine infusion 0.1mcg/kg/min)
(Glucagon 0.1mg/kg IV max 1mg)
Refer to CR-36 for all Pedi Dosing

Pearls:
- The use of lidocaine in heart block can worsen bradycardia and lead to asystole and death.
- Altered mental status may be a sign of poor perfusion.
- Pharmacological treatment of Bradycardia is based upon the presence or absence of symptoms.
- If symptomatic, treat. If asymptomatic, monitor only.
- Consider treatable causes for bradycardia (Beta blocker OD, Calcium channel blocker OD, etc.) - treat appropriately
- Be sure to aggressively oxygenate the patient and support respiratory effort.
- Refer to Pain Management Protocol (TCP)
- Fluid Bolus and Epinephrine Infusion Titrated to maintain a SBP >70 + (age in years x2) mmHg
- **Use volume control device (IV Burette) for Dextrose and Fluid infusions**

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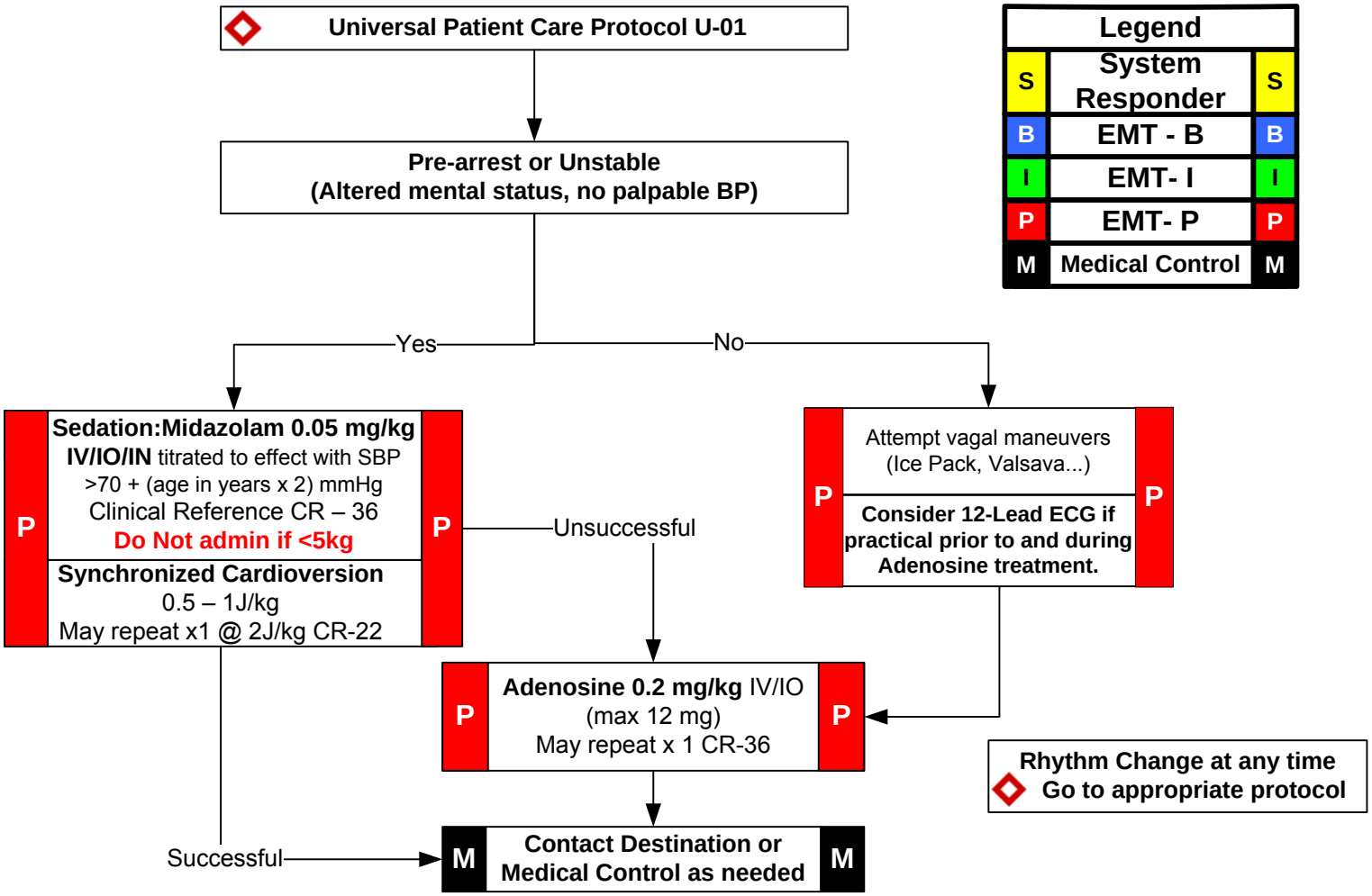
Pediatric Supraventricular Tachycardia

History:	Signs and Symptoms:	Differential:
• Medications (Aminophylline, Diet pills, Thyroid supplements, Decongestants, Digoxin) • Diet (caffeine, chocolate) • Toxic ingestions • History of palpitations / heart racing • Syncope / near syncope	• Heart Rate: Child > 180/bpm Infant > 220/bpm • Pale or Cyanosis • Diaphoresis • Tachypnea • Vomiting • Hypotension • Altered Level of Consciousness • Pulmonary Congestion • Syncope	• Heart disease (WPW, Valvular) • Electrolyte imbalance • Exertion, Pain, Emotional stress • Fever / Infection / Sepsis • Hypothermia / Hyperthermia • Hypoxia • Hypovolemia or Anemia • Drug effect / Overdose (see Hx) • Pulmonary embolus • Trauma / Tension Pneumothorax



Pearls:
- Carefully evaluate the rhythm to distinguish Sinus Tachycardia, Supraventricular Tachycardia and Ventricular Tachycardia.
- Separating the child from the caregiver may worsen the child's clinical condition.
- Pediatric Pads should be used in children < 10 kg or Broselow-Luten color Purple.
- Monitor for respiratory depression and hypotension associated if Benzodiazepine is used.
- Continuous pulse oximetry is required for all SVT Patients if available.
- Document all rhythm changes and therapeutic interventions with monitor strips.
- The maximum sinus tachycardia rate is 220 bpm minus patients age in years.

Adenosine needs to be given rapidly with a flush as close to the Heart as possible

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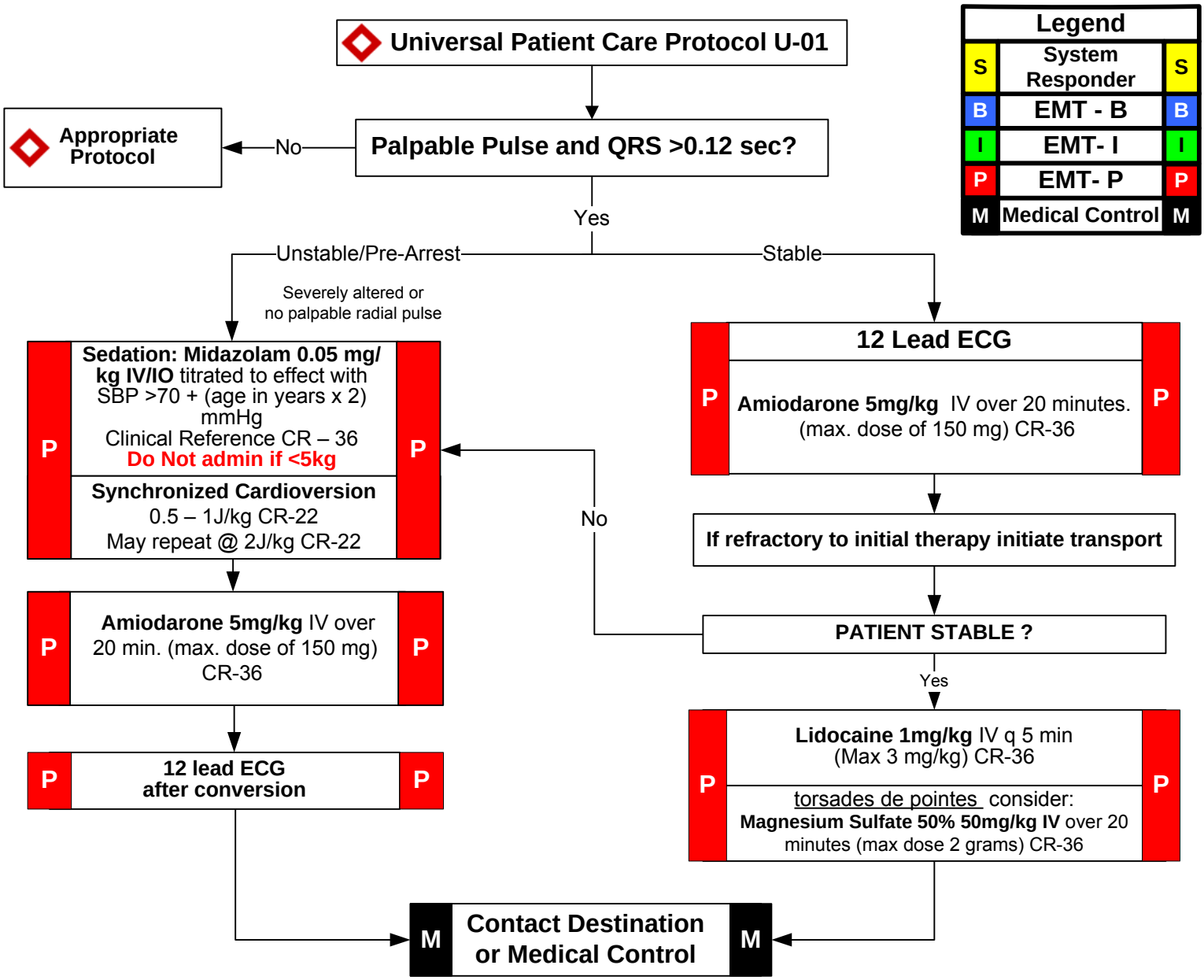
Pediatric Wide Complex Tachycardia With A Pulse

History:	Signs and Symptoms:	Differential:
• Past medical history / medications, diet, drugs • Syncope / Near syncope • Palpitations • Pacemaker • Allergies: Lidocaine / Novocaine	• Ventricular Tachycardia on ECG (Runs or Sustained) • Conscious, rapid pulse • Chest Pain, Shortness of Breath • Dizziness • Rate usually 150-180 bpm for sustained V-Tach • QRS > 0.12 sec	• Artifact / Device Failure • Cardiac • Endocrine/Electrolyte • Drugs/Toxic exposure • Pulmonary disease



Pearls:

- For witnessed / monitored ventricular tachycardia, try having patient cough
- If Lidocaine converts: Infusion of 20 – 50 mcg/kg/min **CR-25**
- Maximum dose of antiarrhythmic should be given before changing antiarrhythmic.
- If hyperkalemia or tricyclic OD consider Sodium Bicarbonate 1 mEq/kg early in intervention. **CR-36**
- Place **Magnesium Sulfate 50% 50mg/kg into 50ml/NS** to infuse over 20 minutes. Using 60gtts set = 150 gtts/min drip rate.**CR-36**

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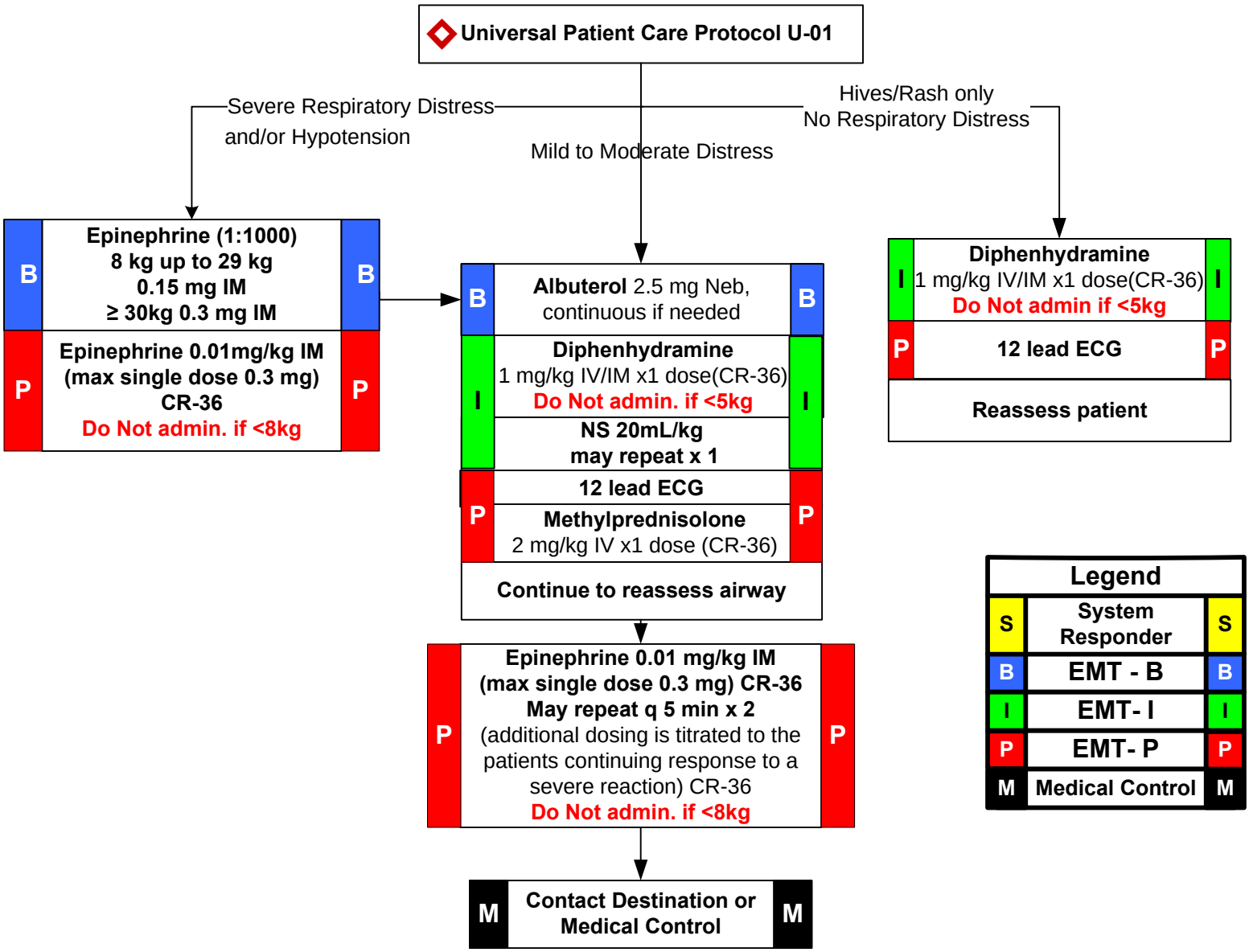
Pediatric Allergic Reaction

History:	Signs & Symptoms:	Differential:
• Medication history • Onset and location • Past medical history • Past history of reactions • New clothing, soap, detergent • Medication allergy / exposure • Food allergy / exposure • Insect sting or bite	• Edema / Voice Changes • Itching or hives • Coughing / wheezing or respiratory distress • Chest or throat constriction • Vomiting or Difficulty swallowing • Hypotension or shock	• Urticaria (rash only) • Anaphylaxis (systemic effect) • Shock (vascular effect) • Angioedema (drug induced) • Aspiration / Airway obstruction • Vasovagal event • CHF • Asthma or COPD



Pearls:

- These patients should receive a 12 lead ECG and should be continually monitored.
- Any patient with respiratory symptoms or extensive skin reaction should receive IV or IM diphenhydramine.
- The shorter the onset from exposure to symptoms the more severe the reaction.
- Fluids and Medication titrated to maintain a SBP >70 + (age in years x 2) mmHg
- **EPI Pen Jr. may still be used for patients 8kg up to 29kg. Patients ≥ 30kg may still use an Adult EPI Pen.**

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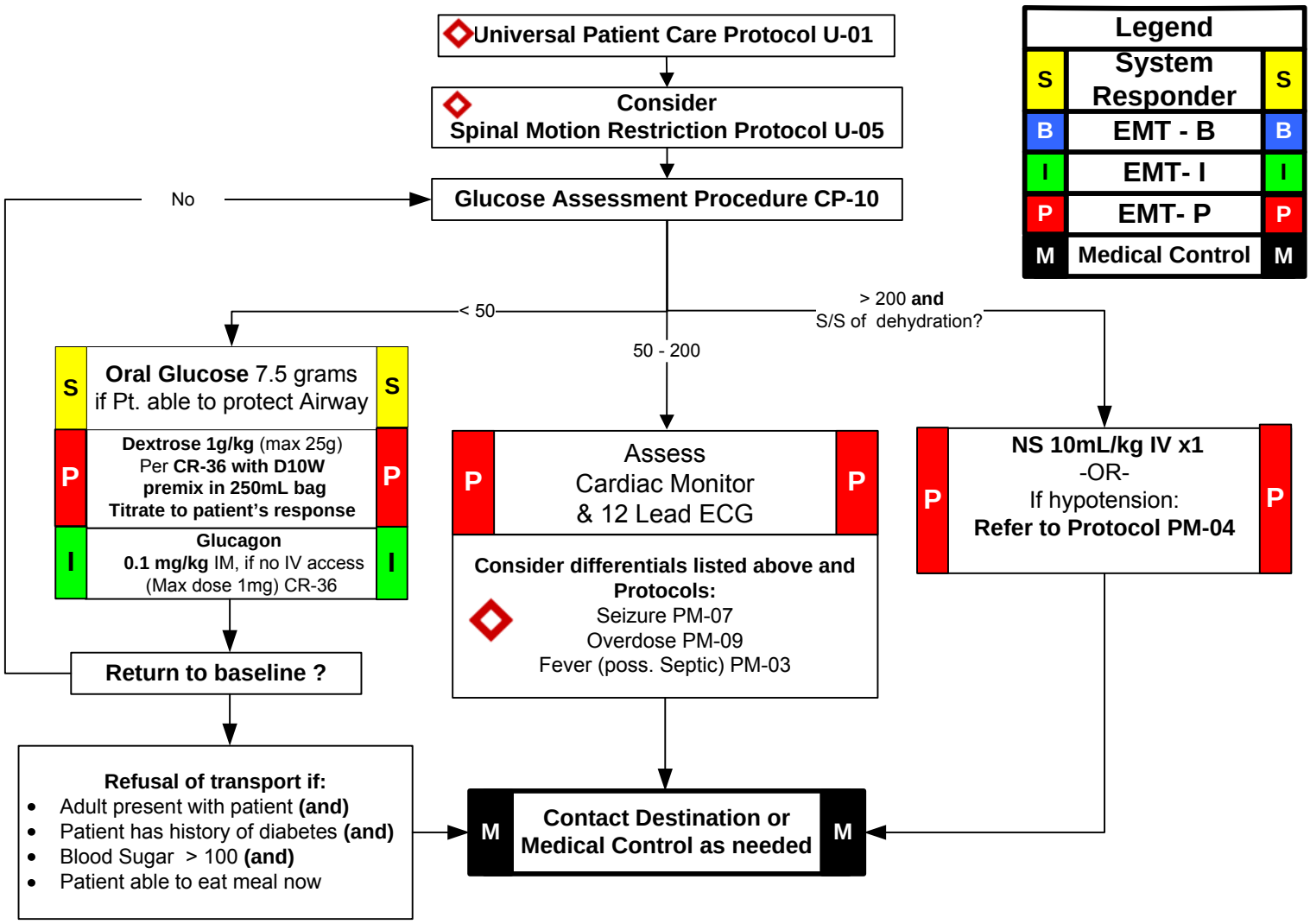
Pediatric Altered Mental Status

History:	Signs/Symptoms:	Differential:
• Sick contacts • Trauma • Possible toxic ingestion • Past medical history • Medications • Seizure activity • PO intake • Last wet diaper/urine	• Decreased mental status • Change in baseline mental status • Bizarre behavior • Hypoglycemia (cool, diaphoretic skin) • Hyperglycemia (warm, dry skin; fruity breath; Kussmaul resps; signs of dehydration)	• Head trauma • CNS (tumor, seizure, infection) • Infection • Shock (septic, metabolic, traumatic) • Diabetes (hyper / hypoglycemia) • Toxicologic/Carbon Monoxide (CO) • Acidosis / Alkalosis • Environmental exposure • Pulmonary (Hypoxia) • Electrolyte abnormality



Pearls:

- Be aware of AMS as presenting sign of an environmental exposure or toxin.
- It is safer to assume hypoglycemia than hyperglycemia if doubt exists.
- Low glucose (<50), normal glucose (50 - 200), high glucose (> 200).
- Patients on oral hypoglycemics are at risk for repeat episodes of hypoglycemia, monitor closely and encourage transport.
- **Use volume control device (IV Burette) for Dextrose Infusions.**

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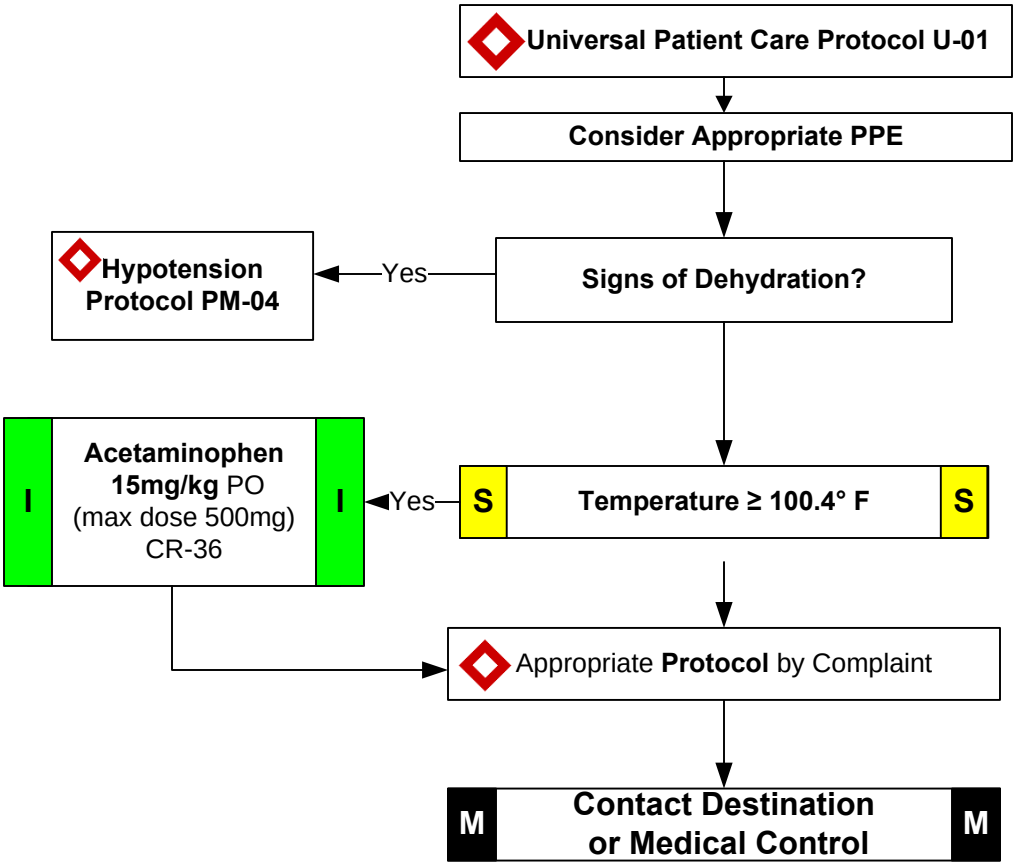
Pediatric Fever/ Infection Control

History:	Signs & Symptoms:	Differential:
• Age • Duration of fever • Severity of fever • Past medical history • Medications • Immunocompromised (transplant, HIV, diabetes, cancer) • Environmental exposure • Last acetaminophen or ibuprofen	• Warm, flushed, diaphoretic • Chills/Rigors • Tachycardia • Cough • Headache, mental status changes • Dysuria, • Abdominal pain • Rash • Petechiae	• Infections / Sepsis • Cancer / Tumors • Medication or drug reaction • Autoimmune Disease • Kawasaki Disease • Environmental exposure • Meningitis



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Pearls:

- If increased temperature; utilize passive cooling by removing excessive clothing or covers.
- Droplet precautions include standard PPE plus a standard surgical mask for providers who accompany patients in the back of the ambulance and a surgical mask or NRB O2 mask for the patient. This level of precaution should be utilized with influenza, meningitis, mumps, streptococcal pharyngitis, and other illnesses spread via large particle droplets are suspected. A patient with a potentially infectious rash should be treated with droplet precautions.
- Contact precautions include standard PPE plus utilization of a gown, change of gloves after every patient contact, and strict hand washing precautions. This level of precaution is utilized when multi-drug resistant organisms (e.g. MRSA, scabies, or zoster (shingles)), or with other illnesses spread by contact are suspected.
- All-hazards precautions(Airborne Precautions) include standard PPE, contact precautions plus N-95 mask for providers. This level of precautions is utilized during the initial phases of an outbreak when the etiology of the infection is unknown or when the causative agent is found to be highly contagious (e.g. SARS,TB).Rehydration with fluids increases the patient's ability to sweat and improves heat loss.
- Allergies to NSAID's (non-steroidal anti-inflammatory medications) are a contraindication to Ibuprofen.
- NSAID's should not be used in the setting of environmental heat emergencies.

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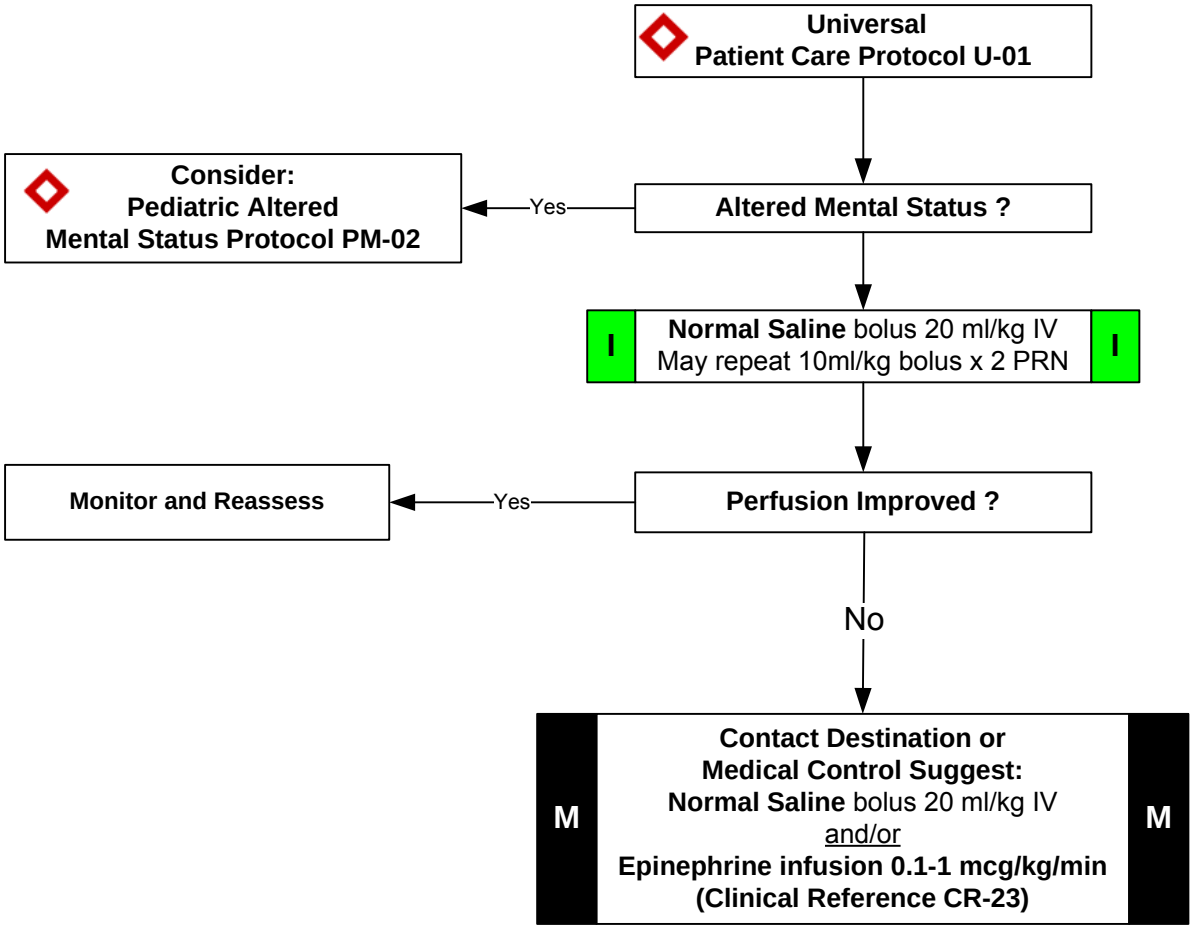
Pediatric Hypotension (Non-Trauma)

History:	Signs and Symptoms:	Differential:
• Vomiting • Diarrhea • Fever • Infection • Sick contacts • PO intake • Last wet diaper/urine • Allergen Exposure • Ingestions/Medications	• Restlessness, confusion, weakness • Syncope • Tachycardia • Diaphoresis • Pale, cool, clammy skin • Delayed capillary refill	• Infection/Sepsis • Dehydration • Vomiting • Diarrhea • Congenital heart disease • Medication or Toxin • Anaphylaxis • Meningitis • Cardiac Failure (myocarditis)



Legend		
S	System Responder	S
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P	EMT- P	P
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Pearls:
- **Pediatric hypotension is defined as a SBP <70 + (age in years x 2) mmHg**
- Consider causes of pediatric hypotension and address per appropriate protocol.
- In the setting of heart failure (myocarditis, CHF); IV fluids may worsen clinical condition.

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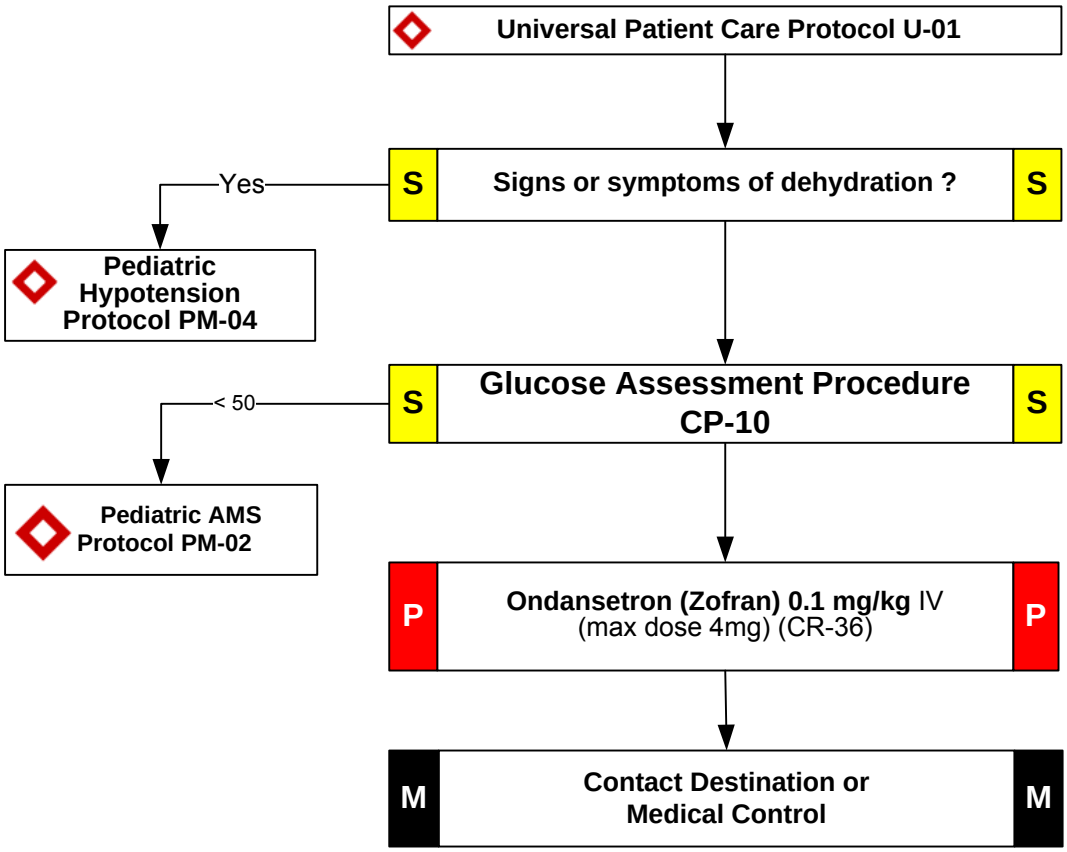
Pediatric Nausea Vomiting and Diarrhea

History:	Signs and Symptoms:	Differential:
• Age • Time of last meal • Last bowel movement / emesis • Improvement or worsening with food or activity • Other sick contacts • Past Medical History • Past Surgical History • Medications • Travel history • Bloody Emesis or diarrhea	• Pain • Distension • Constipation • Diarrhea • Anorexia • Fever • Cough, • Dysuria	• CNS (Increased pressure, headache, tumor, trauma or hemorrhage) • Drugs • Appendicitis • Gastroenteritis • GI or Renal disorders • Diabetic Ketoacidosis • Infections (pneumonia, influenza, UTI) • Electrolyte abnormalities



Legend		
S	System Responder	S
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P	EMT- P	P
M	Medical Control	M

Pearls:

- **Heart Rate: One of the first clinical signs of dehydration, almost always increased heart rate, tachycardia increases as dehydration becomes more severe, very unlikely to be significantly dehydrated if heart rate is close to normal.**
- **Ondansetron, give slow IV push > 30 seconds, given as a single (undiluted) dose.**

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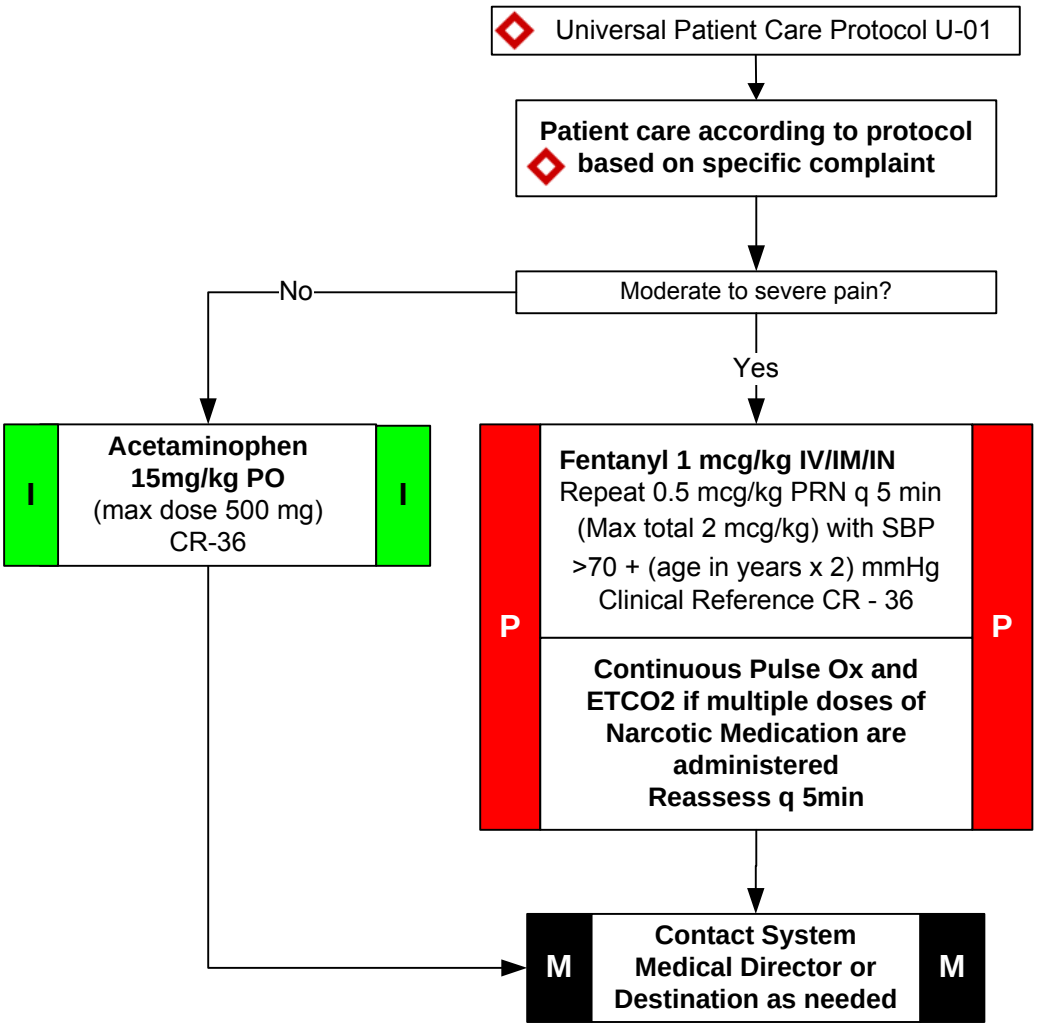
Pediatric Pain Management

History:	Signs and Symptoms:	Differential:
• Age • Location • Duration • Severity (1-10) or Faces Scale • Past Medical History • Medications • Drug allergies	• Severity (pain scale) • Quality • Radiation • Relation to movement, respiration • Increased with palpation of area.	• Per the specific protocol • Musculoskeletal • Visceral (abdominal) • Pleural / Respiratory



Legend		
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P	EMT- P	P
M	Medical Control	M

Appropriate **Protocol** as needed:
Overdose Protocol (AMS) PM-02
Nausea/Vomiting Protocol PM-05
Allergic Reaction Protocol PM-01

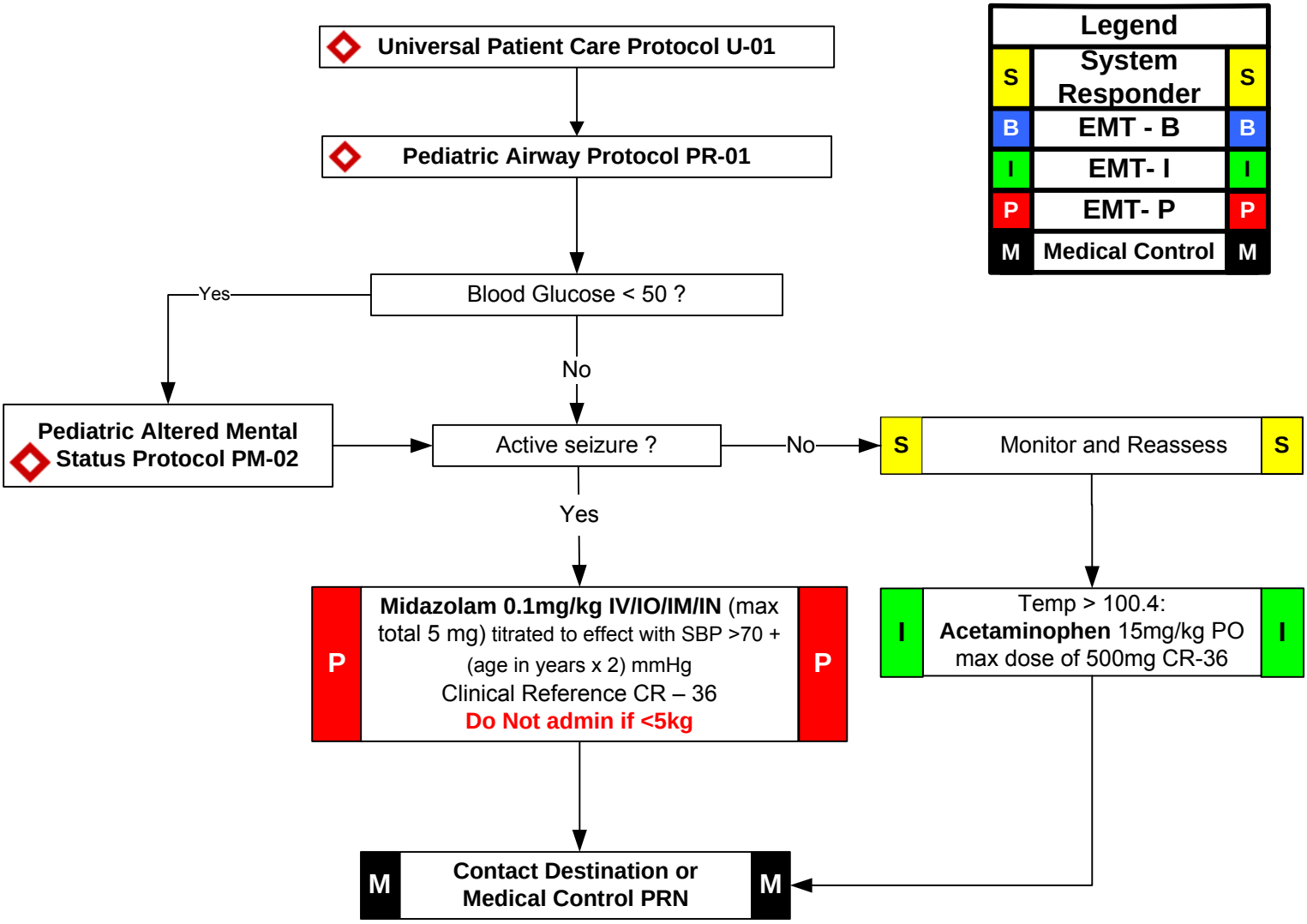
Allow for position of maximum comfort unless contraindicated

Pearls:

- **Pain severity (0-10) is a vital sign to be recorded pre and post IV or IM medication delivery and at disposition.**
- **Vital signs should be obtained pre, 5 minutes post, and at disposition with all pain medications.**
- All patient's must have drug allergies documented prior to administering pain medications.
- Watch closely for respiratory depression with narcotics - refer to Airway Protocol if needed - keep Naloxone available
- Monitor patient closely for oversedation - refer to Overdose Protocol if needed
- Use Wong-Baker faces pain scale as needed
- Splint obvious long bone fractures (deformities) to prevent further injury & minimize pain.

Pediatric Seizure

History:	Signs & Symptoms:	Differential:
• Sick contacts • Prior history of seizures • Medication compliance • Recent head trauma • Whole body vs unilateral seizure activity • Duration • Single/multiple	• Fever • Seizure activity • Incontinence • Tongue trauma • Rash • Nuchal rigidity • Altered mental status	• Febrile seizure • Infection • Head trauma • Medication or Toxin • Hypoxia or Respiratory failure • Hypoglycemia • Metabolic abnormality / acidosis • Tumor



Pearls:

- Addressing the ABCs and verifying blood glucose is more important than stopping the seizure.
- Be prepared to assist ventilations especially if a benzodiazepine is used. Avoiding hypoxemia is extremely important.
- In an infant, a seizure may be the only evidence of a closed head injury.
- Exam: Mental Status, HEENT, Heart, Lungs, Extremities, Neuro
- Impending Status epilepticus is defined as two or more successive seizures or a continuous seizure lasting 5 min without a period of consciousness or recovery. This is a true emergency requiring rapid airway control, treatment, and transport.
- Grand mal seizures (generalized) are associated with loss of consciousness, incontinence, and tongue trauma.
- Focal seizures (petit mal) effect only a part of the body and are not usually associated with a loss of consciousness
- Jacksonian seizures are seizures which start as a focal seizure and become generalized.
- Assess possibility of occult trauma and substance abuse. If evidence or suspicion of trauma, SMR.

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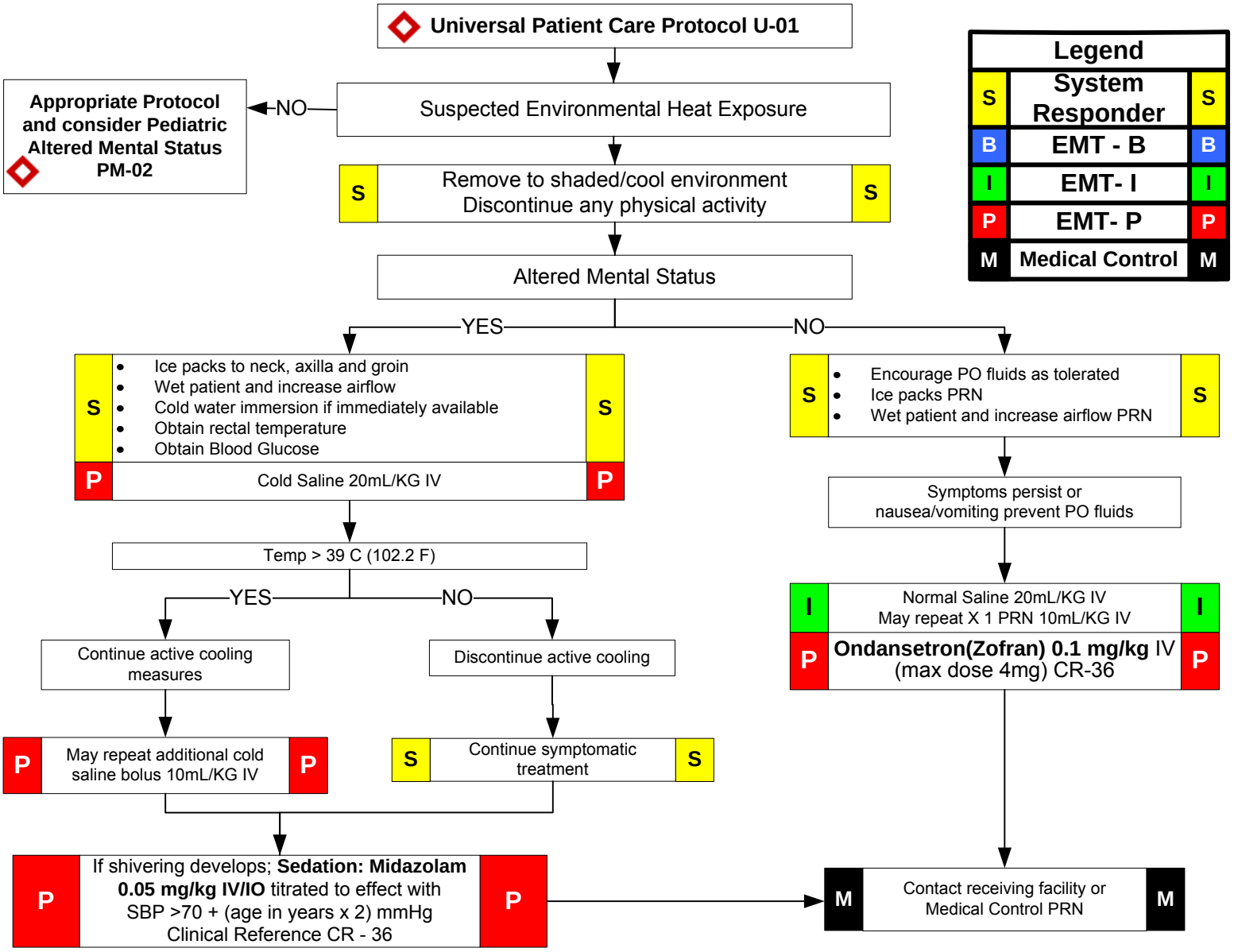
Pediatric Environmental Hyperthermia

History:	Signs & Symptoms:	Differential:
• Recent exertion or heat exposure • Lack of acclimatization • Limited access/control of fluid intake • Cardiovascular disease • Medications (antipsychotics, anticholinergics, diuretics)	• Weakness • Nausea & vomiting • Cramping • Syncope • Diaphoresis or anhydrosis • Altered Mental Status • Bizarre behavior • Hypotension • Tachycardia	• CVA • Dehydration • Encephalopathy • Meningitis/Sepsis • Head Trauma • Overdose/Toxin • Hypoglycemia • Excited Delirium • Alcohol withdrawal



Pearls:

- Exertional heat stroke should be suspected in anyone with hx of recent exertion and bizarre behavior or syncope.
- Any AMS should have Blood Glucose performed. Severe heat emergencies may lead to liver dysfunction and hypoglycemia.
- **IF AMS and Cold saline is not available, ILS may begin normal saline boluses.**
- Rectal temperature should be obtained with provider and patient safety in mind and Patient's level of AMS.

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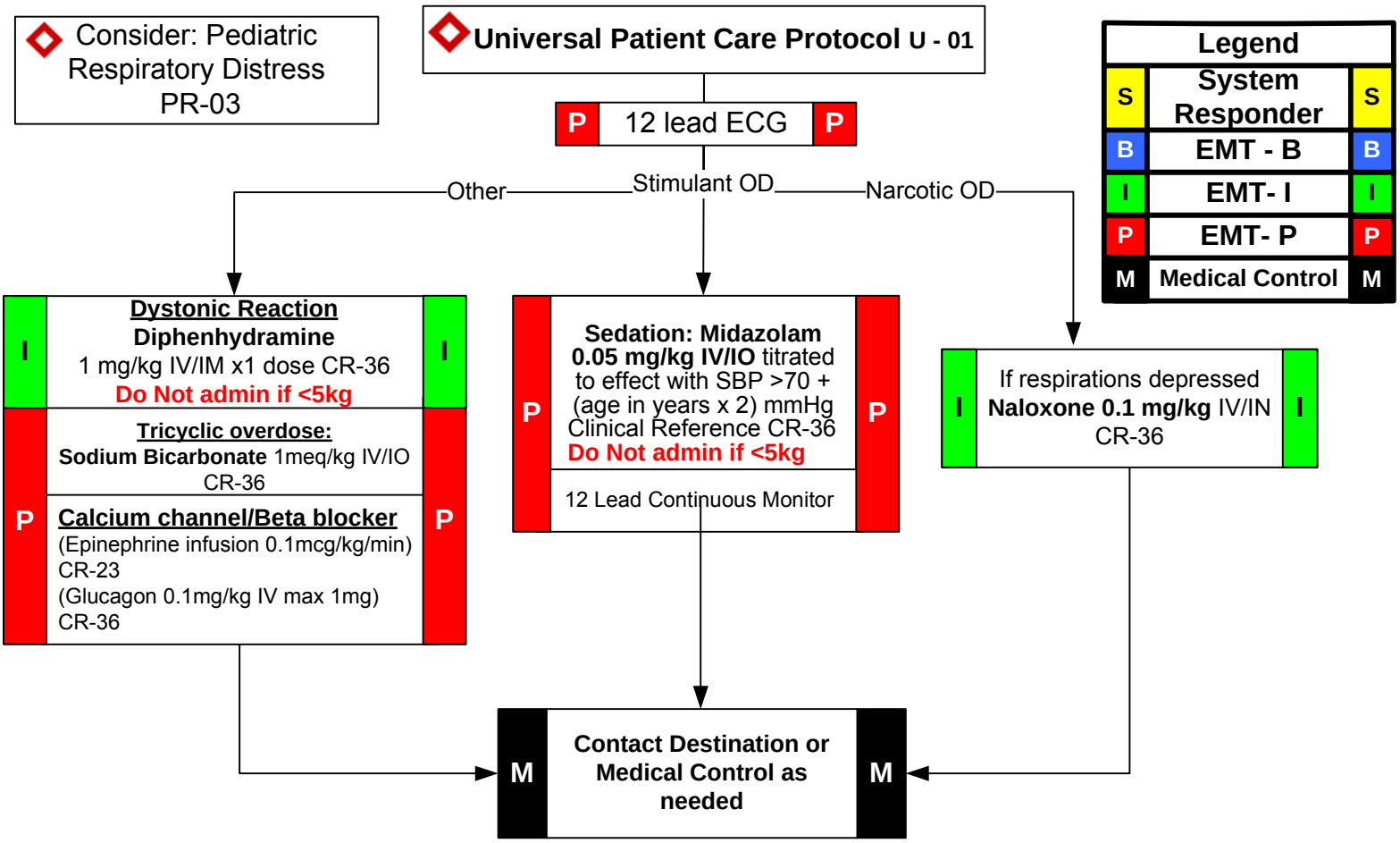
Overdose

History:	Signs and Symptoms:	Differential:
• Ingestion or suspected ingestion of a possibly toxic substance • Substance ingested, route, quantity • Time of ingestion • Reason (suicidal, accidental, criminal) • Available medication in home • Past medical history, medications	• Mental status changes • hypotension/ hypertension • Decreased respiratory rate • Tachycardia, dysrhythmias • Seizures	• Tricyclic antidepressants • Acetaminophen (Tylenol) • Depressants • Stimulants • Anticholinergic • Cardiac medications • Solvents, alcohols, cleaning agents • Insecticides (organophosphates)



Pearls:

- Do not rely on patient history of ingestion especially in suicide attempts.
- Tricyclic: 4 major areas of toxicity: seizures, dysrhythmias, hypotension, decreased mental status or coma; rapid progression from alert mental status to death.
- Depressants: decreased HR, decreased BP, decreased temperature, decreased respirations, non-specific pupils.
- Stimulants: increased HR, increased BP, increased temperature, dilated pupils, seizures.
- Anticholinergic: increased HR, increased temperature, dilated pupils, mental status changes.
- Cardiac Meds: dysrhythmias and mental status changes.
- Solvents: Nausea, vomiting, and mental status changes.
- Insecticides: increased or decreased HR, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils.
- Consider contacting the US/Texas Poison Control Center for guidance. 1-800-222-1222
- DECON of Haz-Mat patients should be performed by trained personnel prior to initial patient contact or transport.

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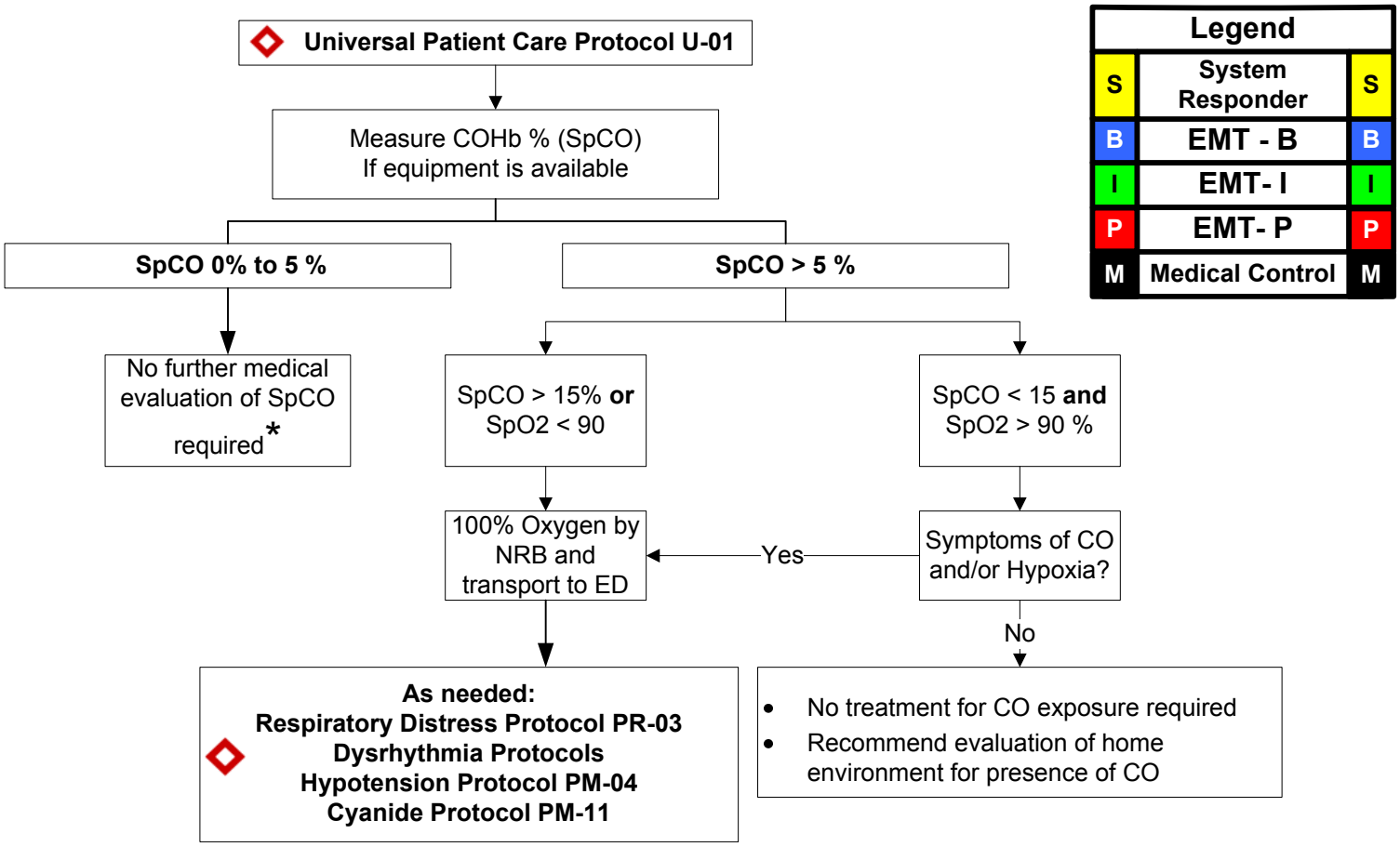
Carbon Monoxide

History:	Signs and Symptoms:	Differential:
• Known or suspected CO exposure • Suspected source/duration exposure • Age • Known or possible pregnancy • Reason (accidental, suicidal) • Measured atmospheric levels • Past medical history, medications	• Altered mental status/dizziness • Headache, Nausea/Vomiting • Chest Pain/Respiratory distress • Neurological impairments • Vision problems/reddened eyes • Tachycardia/tachypnea • Arrhythmias, seizures, coma	• Effects of other toxic fire byproduct • Acute cardiac event • Acute neurological event • Flu/GI illness • Acute intoxication • Diabetic Ketoacidosis • Headache of non-toxic origin



Pearls:
- The absence (or low detected levels of) of COHgb is not a reliable predictor of firefighter or victim exposure to other toxic byproducts of fire.
- In obtunded fire victims, consider cyanide treatment protocol PM-11.
- The differential list for CO Toxicity is extensive. Attempt to evaluate other correctable causes when possible
- Chronic CO exposure is clinically significant.

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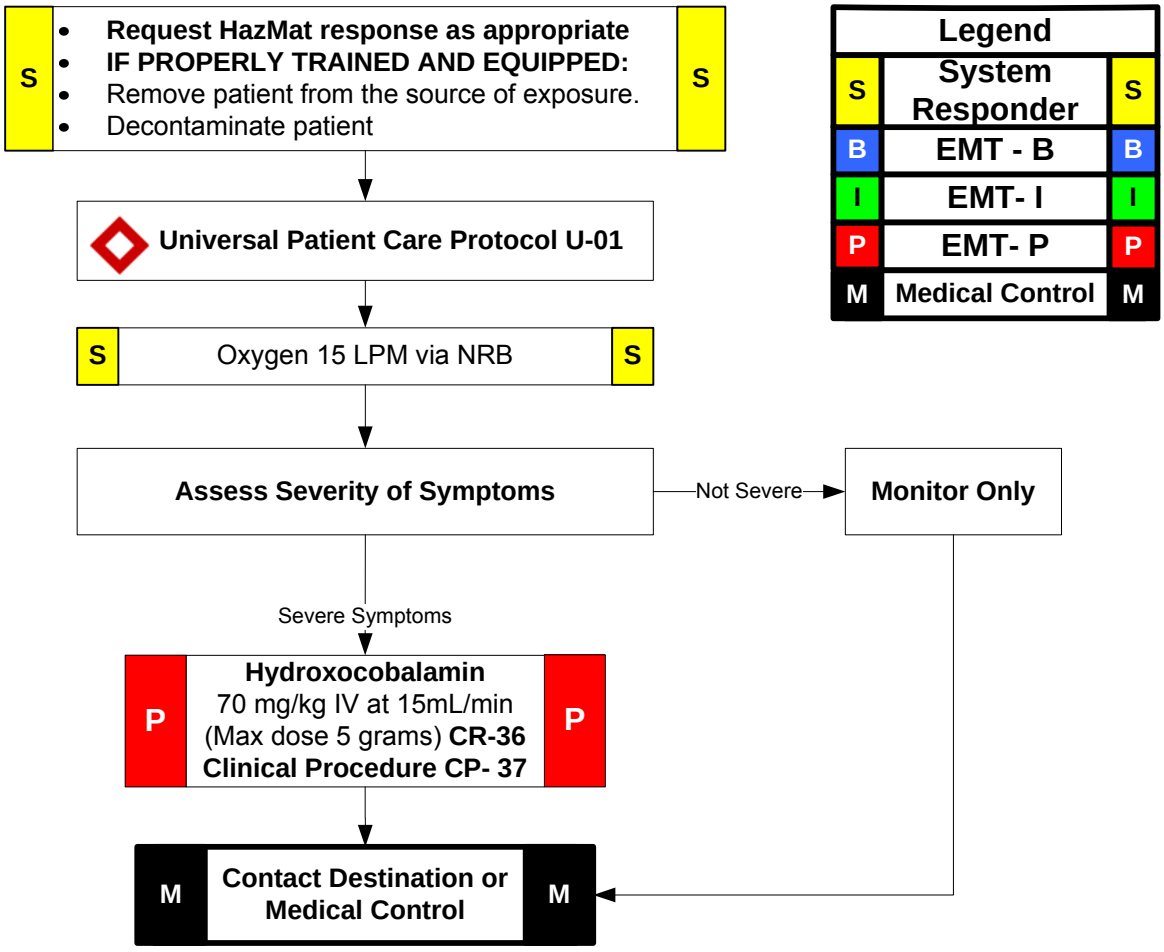
Cyanide

History:	Signs and Symptoms:	Differential:
• Suspected source/duration exposure • Age • Known or possible pregnancy • Reason (accidental, suicidal) • Past medical history, medications	• Headache,weakness, vertigo • Nausea/Vomiting • Chest Pain/Respiratory distress • Tachycardia/tachypnea **SEVERE:** • Cardiac Arrest • Seizures • Altered mental status/coma	• Acute coronary syndrome • Stroke/TIA • Pulmonary embolus • Meningitis/encephalitis • Head trauma • Diabetes • Acute intoxication



Additional Protocols As Needed:
Carbon Monoxide PM-10
Hypotension/Shock PM-04
Hypothermia M-12
Seizure PM-07
Eye Pain M-08 (modify for Pedi Med. Doses)

Pearls:
- Do NOT begin transport until all contaminated clothing has been removed and patient has been decontaminated and cleared for transport.
- Be alert for exposure related dyspnea/tachypnea without cyanosis, nausea/vomiting, seizures, hyper- or hypotension.
- Oxygen via NRFM should be applied to all patients; pulse oximeter readings are unreliable in presence of cyanide or CO poisoning.
- If smoke inhalation always consider carbon monoxide poisoning.
- Mix hydroxocobalamin carefully with strict adherence to the instructions. **Do NOT shake.**

Special Response Protocols (Adult/Pedi)

Version 020415 (MD 14-09)

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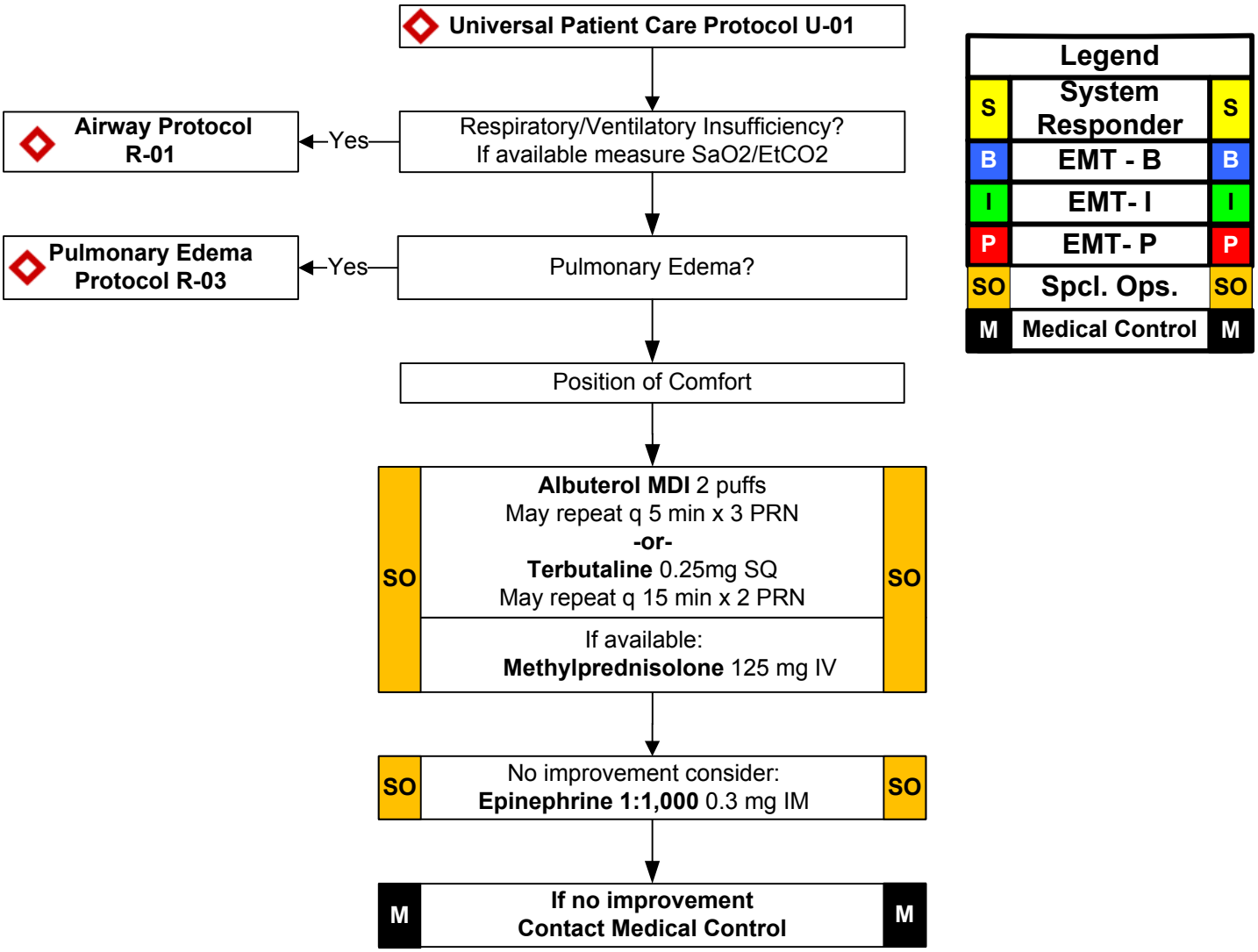
Special Operations: Respiratory Distress (Adult)

History	Signs and Symptoms	Differential
• Asthma; COPD -- chronic bronchitis, emphysema, congestive heart failure • Home treatment (oxygen, nebulizer) • Medications (theophylline, steroids, inhalers) • Toxic exposure, smoke inhalation	• Shortness of breath • Pursed lip breathing • Decreased ability to speak • Increased respiratory rate and effort • Wheezing, rhonchi • Use of accessory muscles • Fever, cough • Tachycardia	• **Asthma** • **Anaphylaxis** • **Aspiration** • **COPD (Emphysema, Bronchitis)** • **Pleural effusion** • **Pneumonia** • **Pulmonary embolus** • **Pneumothorax** • **Cardiac (MI or CHF)** • **Pericardial tamponade** • **Hyperventilation** • **Inhaled toxin (Carbon monoxide, etc.)**



Pearls:

- Administration of a MDI or Terbutaline is restricted to the Special Operations Environment ONLY. Whenever special conditions do not exist patients should be treated according to the Respiratory Distress Protocol.
- Pulse oximetry should be monitored continuously if available when initial saturation is < 95%, or there is a decline in patient's status despite normal pulse oximetry readings.
- A silent chest in respiratory distress is a pre-respiratory arrest sign.
- ETCO2 monitoring when it becomes available should be employed.

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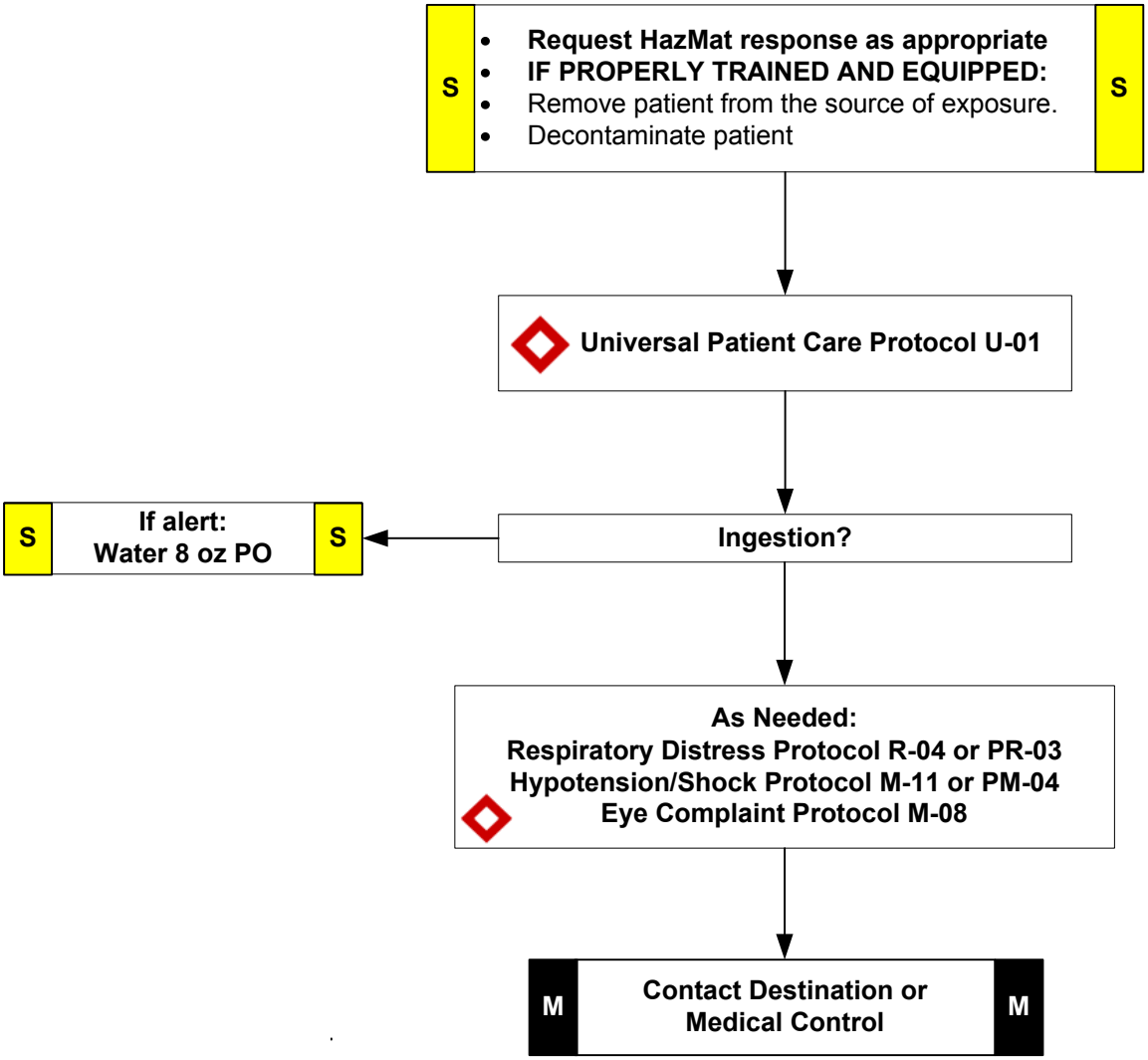
Toxic Exposure: Ammonia

History:	Signs and Symptoms:	Differential:
• Suspected source/duration exposure • Age • Known or possible pregnancy • Reason (accidental, suicidal) • Past medical history, medications	• Altered mental status/dizziness • Headache, Nausea/Vomiting • Chest Pain/Respiratory distress • Neurological impairments • Vision problems/reddened eyes • Tachycardia/tachypnea • Arrhythmias, seizures, coma	• Acute cardiac event • Acute neurological event • Acute intoxication



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
SO	Spcl. Ops.	SO
M	Medical Control	M

Pearls:
- Do NOT begin transport until all contaminated clothing has been removed and patient has been decontaminated and cleared by HazMat for transport.

OFFICE OF THE MEDICAL DIRECTOR
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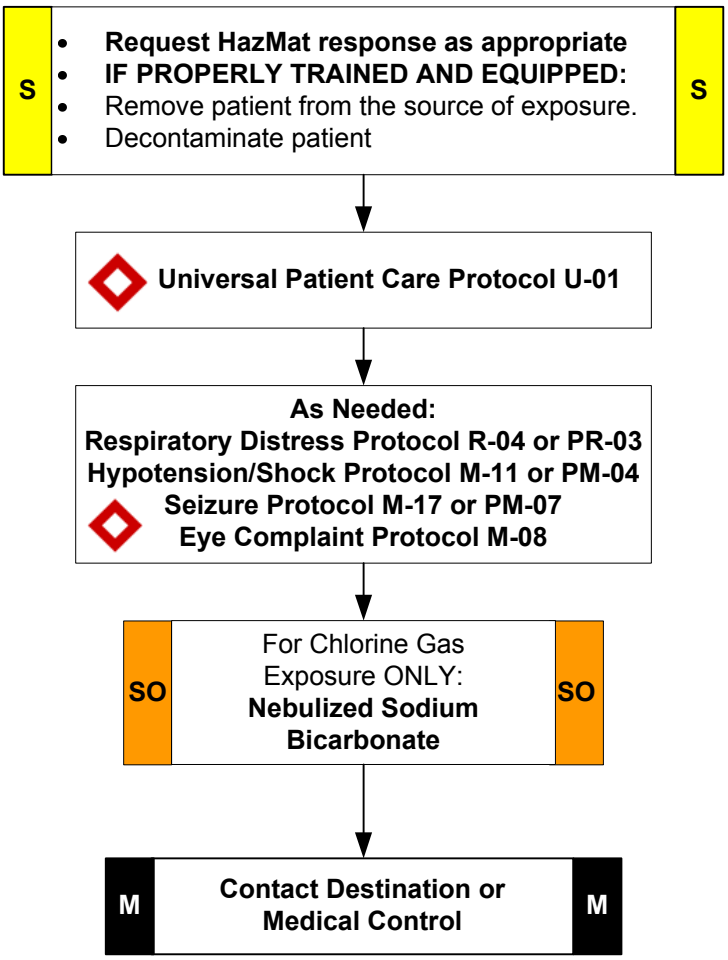
Toxic Exposure: Chlorine and Related Compounds

History:	Signs and Symptoms:	Differential:
• Suspected source/duration exposure • Age • Known or possible pregnancy • Reason (accidental, suicidal) • Past medical history, medications	• Altered mental status/dizziness • Headache, Nausea/Vomiting • Chest Pain/Respiratory distress • Neurological impairments • Vision problems/reddened eyes • Tachycardia/tachypnea • Arrhythmias, seizures, coma	• Acute cardiac event • Acute neurological event • Acute intoxication



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
SO	Spcl. Ops.	SO
M	Medical Control	M

Pearls:
- Do NOT begin transport until all contaminated clothing has been removed and patient has been decontaminated and cleared by HazMat for transport.
- **Sodium Bicarbonate Nebulized: Place 2 ml sodium bicarbonate 8.4% (standard sodium bicarbonate) into 2 ml of sterile water administered by hand-held nebulizer. May be repeated q 20 minutes. Max dose total of 2 times.**
- Monitor for development of pulmonary edema and/or shock.
- Do NOT perform nasotracheal intubation on these patients.

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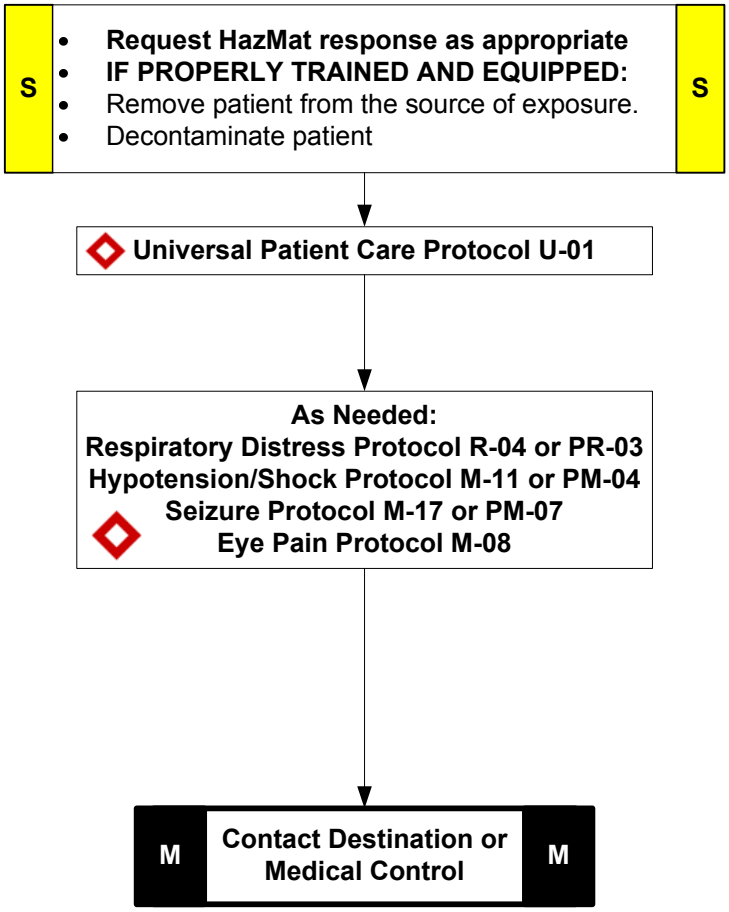
Toxic Exposure: Fumigants
(Methyl Bromide, Sulfuryl Fluoride, Chloropicrin, & Phosphides)

History:	Signs and Symptoms:	Differential:
• Suspected source/duration exposure • Age • Known or possible pregnancy • Reason (accidental, suicidal) • Past medical history, medications	• Altered mental status/dizziness • Headache, Nausea/Vomiting • Chest Pain/Respiratory distress • Neurological impairments • Vision problems/reddened eyes • Tachycardia/tachypnea • Arrhythmias, seizures, coma	• Acute cardiac event • Acute neurological event • Acute intoxication



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
SO	Spcl. Ops.	SO
M	Medical Control	M

Pearls:
- Do NOT begin transport until all contaminated clothing has been removed and patient has been decontaminated and cleared by HazMat for transport.
- Be alert for exposure related acute dyspnea/tachypnea without cyanosis, nausea/vomiting, seizures, hyper/hypotension.

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Toxic Exposure - Hydrazines

History:	Signs and Symptoms:	Differential:
• Suspected source/duration exposure • Age • Known or possible pregnancy • Reason (accidental, suicidal) • Past medical history, medications	• Altered mental status/dizziness • Headache, Nausea/Vomiting • Chest Pain/Respiratory distress • Neurological impairments • Vision problems/reddened eyes • Tachycardia/tachypnea • Arrhythmias, seizures, coma	• Acute cardiac event • Acute neurological event • Acute intoxication

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
SO	Spcl. Ops.	SO
M	Medical Control	M

S

- **Request HazMat response as appropriate**
- **IF PROPERLY TRAINED AND EQUIPPED:**
- Remove patient from the source of exposure.
- Decontaminate patient

S

↓

Universal Patient Care Protocol U-01

↓

As Needed:
Respiratory Distress Protocol R-04 or PR-03
Hypotension/Shock Protocol M-11 or PM-04
Eye Pain Protocol M-08
Seizure protocol M-17 or PM-07

↓

SO **Pyridoxine 25 mg/kg** IV
Over 5 min PRN (CR-35) SO

↓

M **Contact Destination or Medical Control** M

Pearls:

- Do NOT begin transport until all contaminated clothing has been removed and patient has been decontaminated and cleared by HazMat for transport.
- Be alert for exposure related dyspnea/tachypnea without cyanosis, nausea/vomiting, seizures, hypotension

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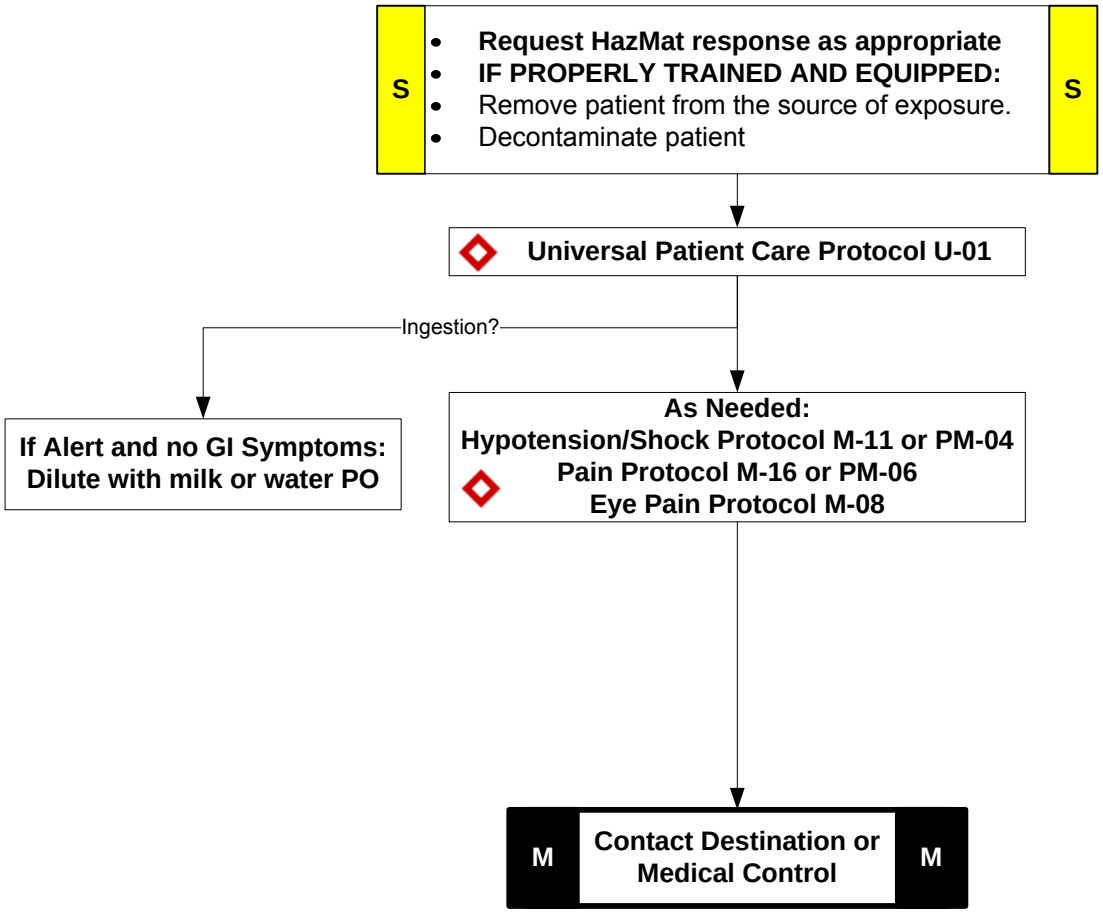
Toxic Exposure: Sodium Hydroxide

History:	Signs and Symptoms:	Differential:
• Suspected source/duration exposure • Age • Known or possible pregnancy • Reason (accidental, suicidal) • Past medical history, medications	• Altered mental status/dizziness • Headache, Nausea/Vomiting • Chest Pain/Respiratory distress • Neurological impairments • Vision problems/reddened eyes • Tachycardia/tachypnea • Arrhythmias, seizures, coma	• Acute cardiac event • Acute neurological event • Acute intoxication



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
SO	Spcl. Ops.	SO
M	Medical Control	M

Pearls:
- DO NOT BEGIN TRANSPORT UNTIL ALL CONTAMINATED CLOTHING HAS BEEN REMOVED AND PATIENT HAS BEEN PROPERLY AND THOROUGHLY DECONTAMINATED AND CLEARED BY HAZMAT FOR TRANSPORT

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Constant Crush > 4 hours

History:	Signs and Symptoms:	Differential:
• Prolonged immobility • Compressed body part(s) • Time/Duration of compression • Renal/Cardiac history • Additional trauma • Loss of consciousness • Air quality	• Compartment Syndrome • Pain on passive stretch • Paresthesia • Paralysis • Pallor • Pulselessness • Hypotension/Shock • Altered Mental Status	• Skin irritant exposure • Toxic inhalation • Dust concretions in airway • Hypo/Hyperthermia • Hyperkalemia • Dehydration • ECG abnormalaties • Additional trauma

Confined space treatment should be performed only by appropriately trained personnel.

NOTE: Air quality monitoring should be conducted and documented prior to entry into confined space. Continuous air quality monitoring must be maintained once contact is made with victim and when any rescuer is in a confined space. Document air quality measurement at patient location on PCR.

Universal Patient Care Protocol U-01

↓

S — Remove rings, bracelets, and other constricting items — S

↓

I — Large bore IV access x 2
NS at 1.5L/hr during extrication
If adequate hemodynamics may reduce to 500mL/hr once extricated — I

P — **Sodium Bicarbonate 1 Amp should be added to each liter NS** — P

↓

P — **Fentanyl: 1 mcg/kg** IV/IM/IN up to 100 mcg may repeat 25 mcg q 10 min (Max total 300 mcg)
SBP > 100mmHg Clinical Reference CR – 35
As needed until improvement. — P

↓

M — **Contact System Medical Director or Destination as needed** — M

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
SO	Spcl. Ops.	SO
M	Medical Control	M

Pearls:

- Hydration should begin prior to extrication whenever possible. Large volume resuscitation prior to removal of the crush object and extrication is critical to preventing secondary renal failure and death.
- Crush injury is usually seen with compression of 4-6 hrs but may occur in as little as 20 min.
- If possible monitor patient for signs of compartment syndrome (pain, pallor, paresthesias, pulselessness)
- Crush injury victims can 3rd space > 12L in the first 48 hrs..
- Elderly patients should be monitored closely for volume overload but do NOT withhold fluids unless clinical signs/ symptoms of volume overload.
- The larger the mass crushed (ie more limbs) the greater the liklihood of severe rhabdomyolysis and renal failure.
- Crush injury may cause profound electrolyte disturbances resulting in dysrhythmias. Monitor if possible.
- Do not overlook treatment of additional injuries, airway compromise, hypothermia/ hyperthermia.
- Nebulized saline and/or albuterol should be administered to victims with dust concretions in airway.
- Patients may develop ileus. Do not give anything by mouth.
- ETCO2 if multiple doses of Narcotic Medication administered

Clinical Reference

Version 020415 (MD 14-09)

OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

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Drips requiring OLMC

Adult Amiodarone Drip

Dose is 0.5-1 mg/min
Amio. Concentration = 50mg/1mL

Step 1
Determine Concentration

Mix 1 mL (50 mg) of Amiodarone in 50 mL NS
In IV Burette (must use 60 drop set)
New Conc. = 1mg/1mL

Step 2
Determine Rate

	Dose in mg/min		
	0.5	0.75	1
Drops/minute	30 gtts.	45 gtts.	60 gtts.

*** Amiodarone is stable for only 2 hours when mixed**

Adult Amiodarone Infusion

Dose is 150 mg over 10 minutes

For VT, WCT of unknown origin, pre-excited A-fib (A-fib with WPW)

Step 1
Determine Concentration

Mix 150 mg in 50 mL NS (using 60 drop set)

Step 2
Determine Rate

Dose in ml/min	
50 mL / 10 min	
300	Drops/ minute

Adult Norepinephrine (Levophed) Infusion

Range of Infusion 2 - 12 mcg/min
Titrate to MAP ≥ 65

Step 1
Determine concentration

Mix 4 mg Levophed into 250 mL N/S (must use 60 drop set)
Concentration = 16mcg/1mL

Step 2
Determine Rate

Dose	2mcg/min	3mcg/min	4mcg/min	5mcg/min	6mcg/min	7mcg/min	8mcg/min	9mcg/min	10mcg/min	11mcg/min	12mcg/min
gtts/min	8	11	15	19	22	26	30	34	38	41	45

Drips requiring OLMC

Adult Epinephrine Drip

Dose is 2-10 mcg/min
EPI Conc. 1mg/1mL

Step 1

Determine Concentration

Mix 2 mL (2mg) of Epinephrine 1:1,000 in 250 mL NS
(must use 60 drop set)
New concentration = 8mcg/1mL

Step 2
Determine Rate

Dose in mcg/min	2 mcg	3 mcg	4 mcg	5 mcg	7 mcg	8 mcg	9 mcg	10 mcg
Drops /min	15 gtts.	22 gtts.	30 gtts.	37 gtts.	52 gtts.	60 gtts.	67 gtts.	75 gtts.

APGAR Scoring

The APGAR score is tool used to evaluate and document a newborn's response to the extrauterine environment. It is generally performed at 1 minute, and again at 5 minutes after birth.

APGAR scores

10 Infant is in best possible condition
7-9 Infant is slightly depressed but near normal
4-6 Infant is moderately depressed
0-3 Infant is severely depressed

Thorough assessment, not APGAR scoring, should determine if, and what type of resuscitation efforts may be required for a newborn

APGAR

1 Minute		*5 Minutes*
_____	**A** Appearance	_____
_____	**P** Pulse	_____
_____	**G** Grimace	_____
_____	**A** Activity	_____
_____	**R** Respiratory	_____
	0=Absent	
	1=Weak	
	2=Strong	
Total_____		**Total**_____

▪

	Sign	0 Points	1 Point	2 Points
A	**Appearance** (Skin Color)	Blue-gray, pale all over	Pink except for extremities	Pink over entire body
P	**Pulse**	Absent	<100/min	>100/min
G	**Grimace** (Reflex Irritability)	No response to stimuli	Grimaces in response to stimuli	Sneezes, coughs, pulls away
A	**Activity** (Muscle Tone)	Absent, flaccid	Arms and legs flexed	Active movement
R	**Respiration**	Absent	Slow, irregular	Good, crying

APGAR scores should be assessed at 1 minute and again at 5 minutes after birth.
****Resuscitation efforts should not be stopped or delayed in order to obtain an APGAR Score****

Asthma Checklist:

- ❑ ETCO2, Pulse Ox, Cardiac Monitor
- ❑ Albuterol/Atrovent Administered
- ❑ CPAP @ 5 cm H2O with Albuterol
- ❑ Consider Magnesium if refractory

Cardiac Arrest Checklist:

- ❑ Pit crew positions identified
- ❑ Continuous compressions being performed with metronome
- ❑ ITD in place w/light activated
- ❑ BVM is attached to oxygen and flowing
- ❑ Monitor visible and in paddles mode
- ❑ Code Commander is identified and positioned at the monitor
- ❑ BVM mask attached to tubing if not being used
- ❑ ETCO2 waveform is present and being monitored
- ❑ IV/IO access has been obtained
- ❑ Gastric distention has been considered/addressed
- ❑ Family is receiving care and is at the patient's side

- ❑ HYPOVOLEMIA
- ❑ HYPOXIA
- ❑ HYDROGEN IONS (ACIDOSIS)
- ❑ HYPOTHERMIA
- ❑ HYPER/HYPOKALEMIA
- ❑ HYPOGLYCEMIA
- ❑ TABLETS/TOXINS
- ❑ TAMPONADE
- ❑ TENSION PNEUMOTHORAX
- ❑ THROMBOSIS (MI)
- ❑ THROMBOSIS (PE)
- ❑ TRAUMA

First Responder Cardiac Arrest Checklist:

- ❑ Pt moved to adequate working area
- ❑ Communications advised CPR in progress
- ❑ Pit crew positions identified
- ❑ Continuous compressions being performed
- ❑ ITD in place w/light activated
- ❑ BVM is attached to oxygen and flowing
- ❑ AED Applied
- ❑ Sufficient personnel or additional requested

Suspected Cardiac Chest Pain Checklist:

- ❑ Rapid ECG criteria/acquisition
- ❑ ASA (if not allergic) chewed
- ❑ Oxygen titrated >95% <100%
- ❑ IF STEMI:
  - o Symptomatic and ≥ 1 mm ST elevation in 2 contiguous leads and no STEMI Alert exclusions (CS – 33)
  - o Immediate packaging/transport
  - o Declare STEMI Alert & Transmit 12 Lead ASAP
  - o Defer additional treatment until enroute
- ❑ NTG SL and paste if:
  - o SBP >100
  - o No allergies to NTG
  - o No Viagra/Levitra last 24 hrs
  - o No Cialis last 48 hrs
  - o IV as time permits
- ❑ Fentanyl for persistent pain
- ❑ Contact receiving facility
  - o Via radio preferred
  - o Via phone if radio not working

CHF Checklist:

- ❑ Absence of fever
- ❑ Oxygen
- ❑ CPAP
- ❑ NTG for HTN
- ❑ Levophed & Fluids for hypotension
- ❑ MI Considered
  - o 12-Lead
  - o If STEMI, Transmit 12 Lead ASAP
  - o ASA

GCS

Eyes Open

- ❑ Spontaneous (4)
- ❑ To Voice (3)
- ❑ To pain (2)
- ❑ None (1)

Best Verbal

- ❑ Oriented (5)
- ❑ Confused (4)
- ❑ Inappropriate (3)
- ❑ Garbled (2)
- ❑ None (1)

Best Motor

- ❑ Obeys (6)
- ❑ Pain-Local (5)
- ❑ Pain withdrawal (4)
- ❑ Pain-Flexion (3)
- ❑ Pain-Extended (2)
- ❑ None (1)

	Seton Medical Center Williamson	Round Rock Medical Center	University Medical Center Brackenridge	Seton Medical Center Austin	St. David's Medical Center	North Austin Medical Center	Heart Hospital of Austin	South Austin Medical Center	Westlake Medical Center	Seton Northwest Hospital	Scott & White Hospital Round Rock	Cedar Park Regional Medical Center	Seton Medical Center Hays	Lakeway Regional Medical Center	Dell Children's Medical Center	North Austin Medical Center	Children's Hospital	Seton Southwest Hospital	St. David's Cedar Park FSED	St. David's Bee Cave FSED	St. David's Pflugerville FSED
Basic Receiving Facilities																					
All Ages Alpha - Charlie < 20 weeks OB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
All Ages Alpha - Charlie ≥ 20 weeks OB		✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓			✓			
All Ages Alpha - Charlie OPEN fractures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			
Comprehensive Receiving Facilities (includes capabilities of all Basic Receiving Facilities)																				
All Ages Alpha - Echo YES OB		✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓						
≥ 18 y/o Alpha - Echo NOT OB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
STEMI Alert YES OB		✓	✓	✓	✓	✓		✓			✓	✓	✓	✓						
STEMI Alert NOT OB	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓						
Resuscitation Alert YES OB		✓	✓	✓	✓	✓		✓					✓	✓						
Resuscitation Alert NOT OB	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓						
Stroke Alert			✓	✓	✓															
Trauma Alert ≥ 15 y/o	✓	✓	✓																	
Sexual Assault Male > 11 y/o	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
Sexual Assault Female ≥ 18 y/o or OB or Menses has begun	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
Pediatric Facilities																				
≤ 17 y/o Alpha-Echo < 20 weeks OB or NOT OB															✓	✓				
≤ 17 y/o Injured **NO** Trauma Alert																✓				
≤ 14 y/o Injured **NO** Trauma Alert															✓	✓				
≤ 14 y/o Injured Trauma Alert															✓					
≤ 17 y/o STEMI, Stroke & Resuscitation Alerts NOT OB															✓	✓				
Sexual Assault Male ≤ 11 y/o															✓					
Sexual Assault Female ≤ 17 y/o NO OB or NO Menses															✓					

Induced Hypothermia Checklist:

- ❑ Meets criteria for induction
  - ROSC
  - ≥ 37 Kg
  - Non-traumatic cause
  - No suspected hemorrhagic cause
  - Temp > 34 C (93.2 F)
  - Unable to follow commands
- ❑ ITD removed
- ❑ If Lucas used release/retract "pressure pad"
- ❑ Airway confirmed with each move
- ❑ Oxygen titrated to >94 < 100%
- ❑ Continuous ETCO2
- ❑ 12-Lead ECG (If STEMI, transmit 12 Lead ASAP)
- ❑ Resuscitation Alert/STEMI Alert Declared
- ❑ Versed/Vecuronium if not hypotensive (advanced airway only)
- ❑ Cold fluids/Levophed for MAP ≥ 65
- ❑ Ice packs applied to neck, axilla, groin
- ❑ Cold saline infused 30ml/kg max 2L
- ❑ Controlled Ventilation < 12 bpm
- ❑ Adequate personnel for transport
- ❑ If loss of ROSC go to appropriate Protocol

MEDICAL ARREST: Termination of Resuscitation without OLMC Checklist:

- ❑ Pt ≥ 18 yoa or family of minor is agreeable (consult Commander/DMO)
- ❑ Adequate CPR has been administered
- ❑ Airway managed with ET, BIAD, Cric
- ❑ IV/IO Access has been achieved
- ❑ Rhythm appropriate meds/treatment administered
- ❑ Persistent (>20 min) Asystole/Agonal rhythm with no reversible causes
- ❑ Failure to establish ROSC at any time
- ❑ Failure to establish recurring/persistent v-fib
- ❑ Arrest not due to suspected hypothermia
- ❑ Providers agree with decision to cease efforts

If all of the above <u>are not met</u> contact an on call System Medical Director for termination of efforts.

TRAUMATIC ARREST: Termination/withholding of Resuscitation Checklist:

- ❑ Obvious injuries incompatible with life and/or obvious signs of organ destruction
- ❑ Pt is pulseless and apneic on arrival of first Provider **AND**
- ❑ Lacks respiratory effort after basic airway maneuvers **<u>AND</u>**
- ❑ Organized electrical activity on ECG w/ rate (less than) < 40.
- ❑ Medical cause of arrest has been considered.

Parkland Burn Formula

Pt weight (kg)		3	5	7	9	11	13	15	17	19	21	23	25	27
% BSA	10	8	13	18	23	28	33	38	43	48	53	58	63	68
	20	15	25	35	45	55	65	75	85	95	105	115	125	135
	30	23	38	53	68	83	98	113	128	143	158	173	188	203
	40	30	50	70	90	110	130	150	170	190	210	230	250	270
	50	38	63	88	112	138	163	188	213	238	263	288	313	388
	60	45	75	105	135	165	195	225	255	285	315	345	375	405
	70	53	88	123	158	193	228	263	298	333	368	403	438	473
	80	60	100	140	180	220	260	300	340	380	420	460	500	540
	90	68	113	158	203	248	293	338	383	428	473	518	563	608
	100	75	125	175	225	275	325	375	425	475	525	575	625	675

Pt weight (kg)		30	35	40	45	50	55	60	70	80	90	100	110	120
% BSA	10	75	88	100	113	125	138	150	175	200	225	250	275	300
	20	150	175	200	225	250	275	300	350	400	450	500	550	600
	30	225	263	300	338	375	413	450	525	600	675	750	825	900
	40	300	350	400	450	500	550	600	700	800	900	1000	1100	1200
	50	375	438	500	563	625	688	750	875	1000	1125	1250	1375	1500
	60	450	525	600	675	750	825	900	1050	1200	1350	1500	1650	1800
	70	525	613	700	788	875	963	1050	1225	1400	1575	1750	1925	2100
	80	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400
	90	675	788	900	1013	1125	1238	1350	1575	1800	2025	2250	2475	2700
	100	750	875	1000	1125	1250	1375	1500	1750	2000	2250	2500	2750	3000

Fluid quantity is amount (in mL's) to be infused during the first hour after injury

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Pediatric Cardioversion and Defibrillation Dose Chart

Determine Joule Dose:	# of Joules x Kg weight = Dose setting for electrical therapy:										
	3 kgs	4kgs	5 kgs	6-7 kgs	8-9 kgs	10-11 kgs	12-14 kgs	15-18 kgs	19-23 kgs	24-29 kgs	30-36 kgs
	6.6 lbs	8.8 lbs	11 lbs	13-15 lbs	17-20 lbs	22-24 lbs	26-30 lbs	33-40 lbs	42-50 lbs	53-64 lbs	66-80 lbs
	in18.25-20.25	in20.25-21.5	in21.5-23.25	in23.25-26.25	in26.25-29.25	in29.25-33	in33-37.5	in37.5-42.5	in42.5-47.75	in47.75-51.25	in51.25-56.25
Cardioversion 0.5 j	1j	2j	2j	3j	4j	5j	7j	8j	10j	15j	15j
Cardioversion 1.0 j	3j	4j	5j	6j	8j	10j	15j	15j	20j	30j	30j
Cardioversion --OR-- Defibrillation 2.0j	6j	8j	10j	15j	15j	20j	30j	30j	50j	50j	70j
Defibrillation 4.0j	10j	15j	20j	30j	30j	50j	50j	70j	85j	100j	120j

1. Verify joule dose for appropriate age as per each individual protocol.
2. Use the PEDIATAPE to estimate weight, and the Color Coded List to verify correct joule dose for weight range.
3. If all verifications are correct, and your partner agrees, administer the appropriate joule dose as per the chart above.
4. Select the next higher length color zone for obese children.

** This reference may include "rounding" of joule doses for weight ranges, safety and **available Monitor Joule settings** **

Pediatric Epinephrine Infusion for IV use

Range of infusion 0.1-1.0 mcg/kg/min

Step 1
Determine Concentration

Concentration of Epi: **1mg/1mL**

must use 60 drop set

Pt Weight in kg	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg
mL of Epi into 250mL bag	0.2 mL	0.3 mL	0.4mL	0.5mL	0.7 mL	0.8 mL

Pt Weight in kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
mL of Epi into 250mL bag	1 mL	1.3 mL	1.7 mL	2 mL	2.6 mL

Calculation based on (Pt weight in kg x 0.08) = mL Epi into 250 mL NS

Step 2
Determine Rate

Dose in mcg/kg/min	0.1	0.2	0.3	0.5	0.7	0.8	0.9	1
Drops/minute	19	38	56	94	131	150	169	188

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Pediatric Lidocaine Infusion

Range of Infusion 20-50 mcg/kg/min

Step 1
Determine Concentration

Lidocaine Concentration: 20mg/1mL
Mix 2mL (40 mg) Lidocaine in 50 mL NS (must use 60 drop set)

Step 2
Determine Rate

Weight in Kg

Dose in mcg/kg/min	3 kg	4kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg
20 mcg (drops/min)	5	6	8	10	13	16	20	25
30 mcg (drops/min)	7	9	11	15	19	24	29	37
40 mcg (drops/min)	9	12	15	20	26	32	39	50
50 mcg (drops/min)	11	15	19	24	32	39	49	62

	19-23 kg	24-29 kg	30-36 kg
20 mcg (drops/min)	32	40	50
30 mcg (drops/min)	47	60	74
40 mcg (drops/min)	63	80	99
50 mcg (drops/min)	79	99	124

Post Resuscitation Checklist

- ❑ ITD Removed
- ❑ Lucas Device “pressure pad” released and retracted
- ❑ Oxygen titrated to >94 < 100%
- ❑ Fluids and Levophed considered for MAP ≥ 65
- ❑ 12-Lead ECG (If STEMI, transmit 12 Lead ASAP)
- ❑ Resuscitation Alert/STEMI Alert Declared
- ❑ Continuous ETCO2 monitoring
- ❑ Controlled Ventilation < 12 bpm
- ❑ Adequate personnel for transport
- ❑ Airway placement confirmed with each move
- ❑ Ensure BVM mask secured onto O2 tubing and immediately available.
- ❑ Consider Criteria for Induced Hypothermia

Refusal of Care/Treatment Checklist:

- ❑ Pt is ≥ 18 or emancipated minor
- ❑ Pt is not suicidal/homicidal
- ❑ Pt demonstrates capacity
- ❑ Pt understands evaluation is incomplete
- ❑ Solutions to obstacles have been sought
- ❑ Pt instructed to seek medical attention
- ❑ Pt instructed to call back at any time
- ❑ Above documented fully in PCR
- ❑ In the following high risk situations contact with Medical Control is recommended:
  - *Age greater than 65?*
  - *Pulse greater than 110 or less than 60?*
  - *Systolic BP greater than 200 or less than 90?*
  - *Respirations greater than 30 or less than 12?*
  - *Serious chief complaint (chest pain, SOB, syncope)*
  - *Significant MOI or high suspicion if injury?*
  - *If it is your impression the patient requires hospital evaluation?*

Capacity Checklist:

- ❑ Patient is able to express in their own words:
  - An understanding of the nature of their illness
  - An understanding of the risks of refusal including death
  - An understanding of alternatives to EMS treatment/transport
  - Pt can provide rationale for refusal and debate this rationale
- ❑ A patient with any of the following **MAY** lack decision making capacity and should be carefully assessed for their ability to perform the above.
  - Orientation to person, place or time that differs from baseline
  - History of drug/alcohol ingestion with appreciable impairment such as slurred speech or unsteady gait
  - Head injury with LOC, amnesia, repetitive questioning
  - Medical condition such as hypovolemia, hypoxia, metabolic emergencies (e.g., diabetic issues); hypothermia, hyperthermia, etc.
- ❑ If any question exists about their capacity contact Medical Control

2011 Guidelines for Field Triage of Injured Patients

1

Measure vital signs and level of consciousness

Glasgow Coma Scale	≤13
Systolic Blood Pressure (mmHg)	<90 mmHg
Respiratory Rate	<10 or >29 breaths per minute, or need for ventilatory support (<20 in infant aged <1 year)

YES → Transport to System Approved Level 1 or 2 Trauma Center Refer to Appendix A-02 and Clinical Reference CR-13

NO ↓

2

Assess anatomy of injury

- All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g. flail chest)
- Two or more proximal long-bone fractures
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis

YES → Transport to System Approved Level 1 or 2 Trauma Center Refer to Appendix A-02 and Clinical Reference CR-13

NO ↓

3

Assess mechanism of injury and evidence of high-energy impact

- **Falls**
  - — Adults: >20 feet (one story is equal to 10 feet)
  - — Children: >10 feet or two or three times the height of the child
- **High-risk auto crash**
  - — Intrusion, including roof: >12 inches occupant site; >18 inches any site
  - — Ejection (partial or complete) from automobile
  - — Death in same passenger compartment
  - — Vehicle telemetry data consistent with a high risk of injury
- **Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact**
- **Motorcycle crash >20 mph**

YES → Transport to System Approved Level 1 or 2 Trauma Center Refer to Appendix A-02 and Clinical Reference CR-13

NO ↓

4

Assess special patient or system considerations

- **Older Adults**
  - — Risk of injury/death increases after age 55 years
  - — SBP <110 may represent shock after age 65
  - — Low impact mechanisms (e.g. ground level falls) may result in severe injury
- **Children**
  - — Should be triaged preferentially to pediatric capable trauma centers
- **Anticoagulants and bleeding disorders**
  - — Patients with head injury are at high risk for rapid deterioration
- **Burns**
  - — Without other trauma mechanism: triage to burn facility
  - — With trauma mechanism: triage to trauma center
- **Pregnancy >20 weeks**
- **EMS provider judgment**

YES → **Transport to System Approved Level 1 or 2 Trauma Center Refer to Appendix A-02 and Clinical Reference CR-13**

NO ↓

Transport according to protocol

When in doubt, transport to a trauma center.

Find the plan to save lives, at www.cdc.gov/Fieldtriage

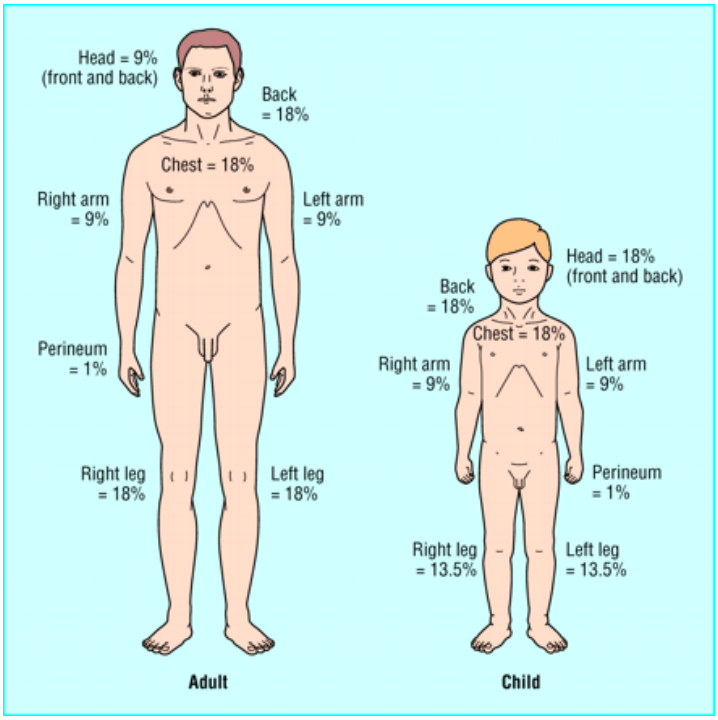
National Center for Injury Prevention and Control
Division of Injury Response

Restraints Checklist:

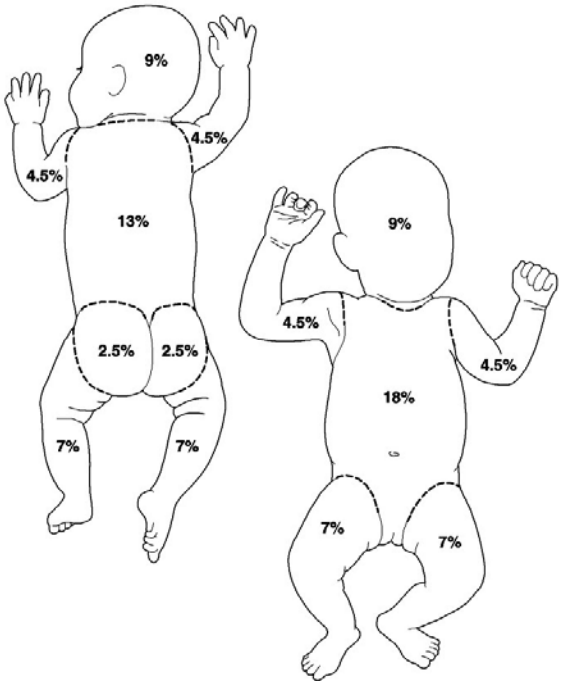
- ❑ All other calming attempts have failed
- ❑ Adequate personnel to effect restraint (consider LE per CP-50)
- ❑ Place Pt. in supine position restrained with1 arm up and 1 arm down
- ❑ PD immediately available if handcuffed
- ❑ EMS personnel in constant attendance
- ❑ Chemical sedation administered
- ❑ Continuous SaO2, ETCO2, Monitor
- ❑ Continuous assessment of neurovascular status
- ❑ Adequate personnel for transport
- ❑ Excited Delirium considered
- ❑ Documentation:
    - Efforts prior to restraint
    - Time of restraint
    - Chemical sedation
    - Continuous monitoring
    - PMS evaluation

Rule of Nines

The Rule of Nines is commonly used to provide a rough estimate of burn injury size. If the burned areas are irregular in shape or widely distributed, an alternate method of estimating the burn area is to visualize the patient's palm as being equal to 1% of body surface area. This is referred to as the "Rule of Palm."



Infant Rule of Nines Chart



Stroke Alert Checklist

- ❑ Time patient "last known well" ≤ 8 hrs
- ❑ Blood glucose >50
- ❑ Cincinnati Prehospital Stroke Screen (CPSS):
  - o Facial droop
  - o Arm drift
  - o Slurred speech
- ❑ Declare STROKE ALERT
- ❑ ID family/historian to accompany
- ❑ Scene time < 15 min

Rapid 12-Lead Criteria

Any patient ≥ 30 years old with the following:

- Suspected cardiac patient
  - Pain between navel and jaw
  - Pressure, discomfort, tightness or heartburn
  - "Heart racing", "palpitations", or "heart too slow"
  - CHF signs and symptoms
- Electrical injuries
- Syncope
- Severe Weakness
- New onset stroke symptoms
- Difficulty breathing (no obvious respiratory cause)
- Suspected overdose
- Patient of any age with any of the above symptoms **AND** history of: (cardiac, diabetes, obese, family history of early CHD, or recent cocaine use)

If the patient meets any of the above criteria: EMT providers are to attach ECG electrodes ASAP and ALS providers are to obtain a 12 lead ECG within 5 minutes of ALS patient contact. If STEMI, transmit 12 Lead ASAP.

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CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

System Approved Medication Dosing List
(Adult Medications)

1. **Verify that the CONCENTRATION listed here is the drug concentration you currently have and are about to administer.**
2. **Estimate weight (weight in kg = weight in pounds/2.2), Determine dose volume for the approximate weight.**
3. **Use Medication Cross-Check Clinical Procedure CP-02**

**** In this chart, a "!" indicates a maximum or minimum dosage or volume that may not correlate to weight ****

**** This reference may include minimal "rounding" of doses and/or volumes for weight ranges and drug safety ****

****Evaluation Medications or Medications not currently available on units*****

Volume in mL to Administer by Approximate Weight at Given Concentration

DRUG CONCENTRATION CURRENTLY AVAILABLE	DRUG NAME	40kg (88lbs)	50kg (110lbs)	60kg (132lbs)	70kg (154lbs)	80kg (176lbs)	90kg (198lbs)	100kg (220lbs)	110kg (242lbs)	120kg (264lbs)	130 kg (286 lbs)
50mcg/1ml	Fentanyl 1st dose	0.8mL	1mL	1.2mL	1.4mL	1.6mL	1.8mL	! 2mL	! 2mL	! 2mL	! 2mL
1mg/1ml	Vecuronium	4mL	5mL	6mL	7mL	8mL	9mL	! 10mL	! 10mL	! 10mL	! 10mL
5mg/1mL	Diltiazem (OLMC) 1st dose	2mL	2.5mL	3mL	3.5mL	! 4mL	! 4mL	! 4mL	! 4mL	! 4mL	! 4mL
5mg/1mL	Diltiazem (OLMC) 2nd dose	2.8mL	3.5mL	4.2mL	! 5mL	! 5mL	! 5mL	! 5mL	! 5mL	! 5mL	! 5mL

System Approved Medication Dosing List
(Adult Medications)

DRUG CONCENTRATION CURRENTLY AVAILABLE	DRUG NAME	40kg (88lbs)	50kg (110lbs)	60kg (132lbs)	70kg (154lbs)	80kg (176lbs)	90kg (198lbs)	100kg (220lbs)	110kg (242lbs)	120kg (264lbs)	130 kg (286lbs)
20mg/1mL	Lidocaine	3mL	3.8mL	4.5mL	5.3mL	6mL	6.8mL	7.5mL	8.3mL	9mL	9.8mL
100mg/1mL	Pyridoxine	10mL	12.5mL	15mL	17.5mL	20mL	22.5mL	25mL	27.5mL	30mL	32.5mL
1mEq/1mL	Sodium Bicarbonate	40mL	50mL	60mL	70mL	80mL	90mL	100mL	110mL	120mL	130mL
100mg/1mL Burns & Pain	Ketamine IM only	0.4mL	0.5mL	0.6mL	0.7mL	0.8mL	0.9mL	1.0mL	1.1mL	1.2mL	1.3mL
100mg/1mL Cardioversion	Ketamine IM only	0.8mL	1.0mL	1.2mL	1.4mL	1.6mL	1.8mL	2.0mL	2.2mL	2.4mL	2.6mL
100mg/1mL Excited Delirium	Ketamine IM only	1.6mL	2.0mL	2.4mL	2.8mL	3.2mL	3.6mL	4.0mL	4.4mL	4.8mL	! 5 mL
10mg/1ml	Rocuronium	4mL	5mL	6mL	7mL	8mL	9mL	! 10mL	! 10mL	! 10mL	! 10mL

System Approved Medication Dosing List
(Pediatric Medications)

3 kgs	4kgs	5 kgs	6-7 kgs	8-9 kgs	10-11 kgs	12-14 kgs	15-18 kgs	19-23 kgs	24-29 kgs	30-36 kgs
6.6 lbs	8.8 lbs	11 lbs	13-15 lbs	17-20 lbs	22-24 lbs	26-30 lbs	33-40 lbs	42-50 lbs	53-64 lbs	66-80 lbs
in18.25-20.25	in20.25-21.5	in21.5-23.25	in23.25-26.25	in26.25-29.25	in29.25-33	in33-37.5	in37.5-42.5	in42.5-47.75	in47.75-51.25	in51.25-56.25

1. Verify dose for appropriate age as per each individual protocol, and verify that the CONCENTRATION listed here is the drug concentration you currently have in service that you are about to administer.
2. Use the PEDIATAPE to estimate weight, and the Color Coded Drug List to verify correct volume for weight range.
3. If all Medication Cross Check (CP-02) verifications are correct, and your partner agrees, administer the appropriate drug volume as per the tables below.
4. Select the next higher length color zone for obese children

** This reference may include minimal "rounding" of doses and/or volumes for weight ranges and drug safety **

** Volume in ml to Administer by Approx. Weight at Given Concentration**

Acetaminophen (APAP) (Tylenol): PO for Fever or Pain or Seizure
Dose to admin. in mL OR tablets (PM-03, PM-06, PM-07) Concentration = 32mg/1mL and Meltaway Tablets = 80mg each

1 mL No tablets	2 mL No tablets	2 mL No tablets	3 mL No tablets	4 mL No tablets	5 mL or 2 tablets	6 mL or 2 Tablets	8 mL or 3 tablets	10 mL or 4 tablets	12 mL or 5 tablets	15 mL or 6 tablets

Adenosine: IV/IO for SVT
May repeat x1 (PC-02) Concentration = 3mg/1mL

0.2 mL	0.3 mL	0.3 mL	0.4 mL	0.6 mL	0.7 mL	0.9 mL	1.1 mL	1.4 mL	1.8 mL	2 mL Max Single Dose

System Approved Medication Dosing List
(Pediatric Medications)

3 kgs	4kgs	5 kgs	6-7 kgs	8-9 kgs	10-11 kgs	12-14 kgs	15-18 kgs	19-23 kgs	24-29 kgs	30-36 kgs
6.6 lbs	8.8 lbs	11 lbs	13-15 lbs	17-20 lbs	22-24 lbs	26-30 lbs	33-40 lbs	42-50 lbs	53-64 lbs	66-80 lbs
in18.25-20.25	in20.25-21.5	in21.5-23.25	in23.25-26.25	in26.25-29.25	in29.25-33	in33-37.5	in37.5-42.5	in42.5-47.75	in47.75-51.25	in51.25-56.25

Amiodarone: IV/IO Infusion over 20 min for VT with Pulse
Place mL dose of medication in 50 mL N/S in an IV burette/60 gtts set. Infuse @ 150 gtts/min (PC-03) Concentration = 50mg/1mL

Amiodarone: IV/IO PUSH for VT/VF in Cardiac Arrest
May repeat x1 (PCA-03) Concentration = 50mg/1mL

0.3 mL	0.4 mL	0.5 mL	0.6 mL	0.8 mL	1 mL	1.3 mL	1.6 mL	2.1 mL	2.6 mL	3 mL Max Single Dose

Atropine Sulfate: IV/IO for Bradycardia
May repeat x1 in 5 min. (PC-01) Concentration = 0.4mg/1mL

0.2 mL	0.2 mL	0.2 mL	0.3 mL	0.4 mL	0.5 mL	0.7 mL	0.8 mL	1 mL	1.3 mL Max Single Dose	1.3 mL Max Single Dose

Dextrose: IV Infusion of 10% Dextrose in 250mL for Hypoglycemia
Max dose 250mL. Must use volume control device (IV Burette) for infusion. Titrate to patient's response/condition. (OB-03, PC-01, PM-02, PCA-02) Concentration = 1gram/10mL

30 mL	40 mL	50 mL	65 mL	85 mL	105 mL	130 mL	165 mL	210 mL	250 mL Max Single Dose	250 mL Max Single Dose

Diphenhydramine (Benadryl): IV/IM for Allergic or Dystonic Reaction
(PM-01, PM-09) Concentration = 50mg/1mL

None	None	0.1 mL	0.1 mL	0.2 mL	0.2 mL	0.3 mL	0.3 mL	0.4 mL	0.5 mL	0.7 mL

System Approved Medication Dosing List
(Pediatric Medications)

3 kgs	4kgs	5 kgs	6-7 kgs	8-9 kgs	10-11 kgs	12-14 kgs	15-18 kgs	19-23 kgs	24-29 kgs	30-36 kgs
6.6 lbs	8.8 lbs	11 lbs	13-15 lbs	17-20 lbs	22-24 lbs	26-30 lbs	33-40 lbs	42-50 lbs	53-64 lbs	66-80 lbs
in18.25-20.25	in20.25-21.5	in21.5-23.25	in23.25-26.25	in26.25-29.25	in29.25-33	in33-37.5	in37.5-42.5	in42.5-47.75	in47.75-51.25	in51.25-56.25

Epinephrine: IM for Refractory Wheezing (max single dose 0.3mL) x 1 (PR-03) Concentration = 1mg/1mL (1:1,000)										
Epinephrine: IM for Allergic Reaction/Anaphylaxis (max single dose 0.3mL) x 4 q 5min (max total 1.2 mL) (PM-01) Concentration = 1mg/1mL (1:1,000)										
None	None	None	None	0.1 mL	0.1 mL	0.1 mL	0.2 mL	0.2 mL	0.3 mL Max Single Dose	0.3 mL Max Single Dose

Epinephrine: IV/IO for Cardiac Arrest or Bradycardia Repeat every 3-5 min (PCA -02, PCA-03, PC-01) Concentration = 0.1mg/1mL (1:10,000)										
0.5 mL	0.5 mL	0.5 mL	0.5 mL	1 mL	1 mL	1.5 mL	2 mL	2 mL	3 mL Max Single Dose	3 mL Max Single Dose

Fentanyl Citrate: IV/IM/IN for Pain With SBP >70 + (age in years x 2) mmHg (Max is 2 doses only per patient weight) (PM-06) Concentration = 50mcg/1mL										
Fentanyl Citrate: IV/IM/IN for Burns Repeat q 5 min and Do Not reduce initial dose (Max total 4 mL) with SBP >70 + (age in years x 2) mmHg (PT-01) Concentration = 50mcg/1mL										
0.1 mL 1st Dose	0.1 mL 1st Dose	0.1 mL 1st Dose	0.1 mL 1st Dose	0.2 mL 1st Dose	0.2 mL 1st Dose	0.3 mL 1st Dose	0.3 mL 1st Dose	0.4 mL 1st Dose	0.5 mL 1st Dose	0.7 mL 1st Dose
None	None	None	0.1 mL 2nd Dose	0.1 mL 2nd Dose	0.1 mL 2nd Dose	0.1 mL 2nd Dose	0.2 mL 2nd Dose	0.2 mL 2nd Dose	0.3 mL 2nd Dose	0.3 mL 2nd Dose

System Approved Medication Dosing List
(Pediatric Medications)

3 kgs	4kgs	5 kgs	6-7 kgs	8-9 kgs	10-11 kgs	12-14 kgs	15-18 kgs	19-23 kgs	24-29 kgs	30-36 kgs
6.6 lbs	8.8 lbs	11 lbs	13-15 lbs	17-20 lbs	22-24 lbs	26-30 lbs	33-40 lbs	42-50 lbs	53-64 lbs	66-80 lbs
in18.25-20.25	in20.25-21.5	in21.5-23.25	in23.25-26.25	in26.25-29.25	in29.25-33	in33-37.5	in37.5-42.5	in42.5-47.75	in47.75-51.25	in51.25-56.25

Glucagon: IM/IV/IO for Hypoglycemia or Overdose
(PC-01, PM-02, PM-09, PCA-02) Concentration = 1mg/1mL

0.3 mL	0.4 mL	0.5 mL	0.7 mL	0.9 mL	1 mL Max SingleDose	1 mL Max SingleDose	1 mL Max SingleDose	1 mL Max Single Dose	1 mL Max Single Dose	1 mL Max Single Dose

Hydroxocobalamin (Vitamin B12): IV Infusion for Cyanide Exposure @ 15mL/min
Must use volume control device (IV Burette) for infusion. (PM-11) mix 5 gram vial of hydroxocobalamin for injection with 200 mL of 0.9% Sodium Chloride = Concentration: 25mg/1mL

8.4 mL	11 mL	14 mL	18 mL	23 mL	29 mL	36 mL	46 mL	59 mL	74 mL	92 mL

Lidocaine: IV/IO for VT with Pulse and VT/VF Cardiac Arrest
Repeat q 5 min (Max is 3 doses only per patient weight) (PC-03, PCA-03) Concentration = 20 mg/1mL

0.1 mL	0.2 mL	0.2 mL	0.3 mL	0.4 mL	0.5 mL	0.6 mL	0.8 mL	1.1 mL	1.4 mL	1.7 mL

Magnesium Sulfate 50%: IV Infusion over 20 minutes , Respiratory Distress or VT with pulse
Place mL dose of medication in 50 mL N/S in an IV burette/60 gtts set. Infuse @ 150 gtts/min (PR-03, PC-03) Concentration = 500 mg/1mL

Magnesium Sulfate 50%: Slow IV/IO PUSH for VT/VF Cardiac Arrest
May repeat same dose q- 5 minutes until a maximum total dose of 4 mL (PCA-03) Concentration = 500 mg/1mL

0.3 mL	0.4 mL	0.5 mL	0.6 mL	0.8 mL	1 mL	1.3 mL	1.6 mL	2.1 mL	2.7 mL	3.3 mL

System Approved Medication Dosing List
(Pediatric Medications)

3 kgs	4kgs	5 kgs	6-7 kgs	8-9 kgs	10-11 kgs	12-14 kgs	15-18 kgs	19-23 kgs	24-29 kgs	30-36 kgs
6.6 lbs	8.8 lbs	11 lbs	13-15 lbs	17-20 lbs	22-24 lbs	26-30 lbs	33-40 lbs	42-50 lbs	53-64 lbs	66-80 lbs
in18.25-20.25	in20.25-21.5	in21.5-23.25	in23.25-26.25	in26.25-29.25	in29.25-33	in33-37.5	in37.5-42.5	in42.5-47.75	in47.75-51.25	in51.25-56.25

Methylprednisolone (Solu-Medrol): IV/IM for Allergic Reaction or Respiratory Distress
(PM-01, PR-03) Concentration = 62.5 mg/1mL

0.1 mL	0.1 mL	0.2 mL	0.2 mL	0.3 mL	0.3 mL	0.4 mL	0.5 mL	0.7 mL	0.9 mL	1 mL

Midazolam: IV/IO/IM/IN for **Seizure**
(max total 1 mL) titrated to effect with SBP >70 + (age in years x 2) mmHg (PM-07) Concentration = 5 mg/1mL

None	None	0.1 mL	0.1 mL	0.2 mL	0.2 mL	0.3 mL	0.3 mL	0.4 mL	0.5 mL	0.7 mL

Midazolam: IV/IO for **Sedation**
(max total 1 mL) titrated to effect with SBP >70 + (age in years x 2) mmHg (PC-02, PC-03, PM-09) Concentration = 5 mg/1mL

None	None	0.1 mL	0.1 mL	0.1 mL	0.1 mL	0.1 mL	0.2 mL	0.2 mL	0.3 mL	0.3 mL

Naloxone (Narcan): IV/IN for Narcotic OD
(OB-03, PM-09) Concentration = 1mg/1mL

0.3 mL	0.4 mL	0.5 mL	0.7 mL	0.9 mL	1 mL	1.3 mL	1.6 mL	2 mL Max. Single Dose	2 mL Max Single Dose	2 mL Max Single Dose

Ondansetron (Zofran): IV single (undiluted) dose for Nausea/Vomiting
Given over > 30 sec. (PM-05, PM-08) Concentration = 2 mg/1mL

0.2 mL	0.2 mL	0.3 mL	0.3 mL	0.4 mL	0.5 mL	0.7 mL	0.8 mL	1 mL	1.3 mL	1.7 mL

System Approved Medication Dosing List
(Pediatric Medications)

3 kgs	4kgs	5 kgs	6-7 kgs	8-9 kgs	10-11 kgs	12-14 kgs	15-18 kgs	19-23 kgs	24-29 kgs	30-36 kgs
6.6 lbs	8.8 lbs	11 lbs	13-15 lbs	17-20 lbs	22-24 lbs	26-30 lbs	33-40 lbs	42-50 lbs	53-64 lbs	66-80 lbs
in18.25-20.25	in20.25-21.5	in21.5-23.25	in23.25-26.25	in26.25-29.25	in29.25-33	in33-37.5	in37.5-42.5	in42.5-47.75	in47.75-51.25	in51.25-56.25

Sodium Bicarbonate: IV/IO for Acidosis or Tricyclic OD
(PC-01, PCA-02, PM-09) Concentration = 1mEq/1mL

3 mL	4 mL	5 mL	6.5 mL	8.5 mL	10.5 mL	13 mL	16.5 mL	21 mL	26.5 mL	33 mL

Infusion Requiring OLMC

Calcium Chloride: IV/IO Infusion over 10 minutes for Calcium Channel Blocker OD
Place mL dose of medication in 50 mL N/S in an IV burette/60 gtts set. Infuse @ 300 gtts/min Concentration = 100 mg/1mL

0.6 mL	0.8 mL	1 mL	1.3 mL	1.7 mL	2.1 mL	2.6 mL	3.3 mL	4.2 mL	5.3 mL	6.6 mL

Medications Quick Reference Chart

Medication & COG or Document used in:	Adult Dose ≥ 37 Kg	Pedi Dose < 37 Kg
Acetaminophen (APAP) (Tylenol): Adult Fever/Infection M-09, Adult Pain M-16, Pedi Fever/Infection PM-03, Pedi Pain PM-06, Pedi Seizure PM-07, Clinical Reference: (Pedi) CR - 36	Up to 1 Gram PO (M-09, M-16)	15 mg/kg PO (max dose 500mg) (PM-03, PM-06, PM-07, CR-27)
Adenosine: Adult SVT C-04, Pedi SVT PC-02 Clinical Reference:(Pedi)CR-36	12 mg IV/IO may repeat x1 (max 24 mg total) (C-04)	0.2mg/kg, IV/IO (max of 12 mg per dose) may repeat X1 (PC-02)
Albuterol: Adult Allergic Reaction M-02, Adult Respiratory Distress R-04, Adult Respiratory Distress Spcl. Ops.SO-01 Adult and Pedi Drowning T-04 Pedi Allergic Reaction PM-01, Pedi Respiratory Distress PR-03 Clinical Standard CS-20	2.5 mg single dose Neb. (T-04) 2.5 mg continuous Neb. (M-02, R-04) Assist with "Patients MDI" (R-04) 2 "puffs" MDI unit doses q5 x3 prn (SO-01)	2.5 mg single dose Neb. (T-04) 2.5 mg continuous Neb. (PM-01, PR-03) Assist with "Patients MDI" x 6 (PR-03)
Amiodarone: Adult Wide Complex Tachycardia C-05, Adult Pulseless VF/VT CA-03, Pedi Wide Complex Tachycardia PC-03, Pedi Pulseless VF/VT PCA-03 Clinical References: (Adult Infusion Charts) CR-01, CR-02, (Pedi Infusion Chart) CR-36	150mg IV/IO over 10 minutes. May repeat x2 150 mg q10 min (max. total dose 450 mg) (C-05) 300mg IV/IO push Repeat in 4min at 150 mg IV push x 1 (CA-03)	5mg/kg IV/IO over 20 min. (max. dose of 150 mg) (PC-03) 5 mg/kg IV/IO (max 300mg) may repeat x1 (max 2nd dose 150 mg) (PCA-03)
Aspirin: Adult Chest Pain/Suspected ACS (C-01)	324 mg PO (C-01)	Ø
Atropine Sulfate: Adult Organophosphate Exposure (M-14) Adult Bradycardia Algorithm (C-02) Pedi Bradycardia Algorithm (PC-01) Clinical Reference: (Pedi Dose Chart) CR-36	0.8 mg q3 up to 0.04mg/kg IV/IO (C-02) 2 mg up to 6 mg atropine IV/IO/IM. May repeat every 3 to 5 mins until symptoms improve (M-14)	0.02 mg/kg (Min 0.1 mg--Max 1 mg) IV/IO May repeat x1 in 5 min. (PC-01)
Calcium Chloride: Adult Bradycardia C-02 (**OLMC**), Adult Asystole/PEA CA-02, Adult Pulseless VF/VT CA-03, Adult Persistent Pulseless DSED CA-06 Adult Overdose M-15 (**OLMC**), Clinical References: (Pedi Infusion Charts) CR-36 (**OLMC**)	1 gram IV/IO (CA-02,CA-03, CA-06) 1 gram IV/IO over 10 minutes (C-02, M-15)	Ø

Medications Quick Reference Chart

Chlorohexadine: Wound site preparation Clinical Procedures: CP-05, CP-10, CP-17, CP-28, CP-34, CP-37, CP-38, CP-61	Unit dose (packet)	Unit dose (packet) if ≥ 6 months old
Dextrose: Adult Asystole/PEA CA-02, Adult Altered Mental Status M-03, Newly Born OB-03, Pedi Bradycardia PC-01, Pedi Altered mental Status PM-02, Pedi Asystole/PEA PCA-02 Clinical Reference: (Pedi Dose Chart) CR-36 Clinical Standard CS-20	IV Infusion of 10% Dextrose in 250mL premixed bag of Sterile Water (CA-02, M-03) Titrate to patient's response/condition.	1g/kg IV Infusion of 10% Dextrose in 250mL premixed bag of Sterile Water Max dose 25 grams (OB-03, PC-01, PM-02, PCA-02, CR-21) Must use volume control device (IV Burette) for infusion. Titrate to patient's response/condition.
Diltiazem: Adult Atrial fib. with RVR C-03 (**OLMC**), Adult SVT C-04 (**OLMC**) Clinical Reference:(Adult)CR-35	1st dose 0.25 mg/kg (max 20 mg) May repeat in 15 min: 2nd dose 0.35 mg/kg (max 25 mg) (C-03, C-04)	Ø
Diphenhydramine (Benadryl): Adult Allergic Reaction M-02, Adult Behavioral M-05, Pedi Allergic Reaction PM-01, Pedi Overdose PM-09 Clinical Reference:(Pedi)CR-36	25 mg IM/IV/PO (M-02) 50 mg IV/IM (M-02, M-05)	1 mg/kg IV/IM x1 dose (PM-01, PM-09) Do Not administer if < 5kg
Enalapril (Vasotec): Adult Pulmonary Edema R-03	1.25 mg IV if SBP ≥ 140 mmHg (R-03)	Ø
Epinephrine: Adult Bradycardia C-02 (**OLMC**), Adult Asystole/PEA CA-02, Adult Pulseless VF/VT CA-03, Adult Allergic Reaction M-02, Adult Respiratory Distress R-04 Adult Respiratory Distress Spcl. Ops.SO-01 Pedi Bradycardia PC-01, Pedi Allergic Reaction PM-01, Pedi Overdose PM-09, Pedi Respiratory Distress PR-03, Pedi Asystole/PEA PCA-02, Pedi Pulseless VF/VT PCA-03, Pedi Hypotension PM-04 (**OLMC**), Pedi Multi. Trauma PT-03 (**OLMC**), Clinical References: (Adult Infusion) CR-4, (Pedi Infusion) CR-23 Clinical Standard CS-20 Clinical Reference:(Pedi)CR-36	0.3 mg 1:1,000 IM per dose x 4 q5min (max total **1.2** mg) (M-02) EMT-B and ILS Providers single dose of 0.3 mg IM (1:1,000) if ≥ 30 kg (M-02) Epi Pin ≥ 30 kg (M-02) 0.3 mg 1:1,000 IM per dose x 1 (S0-01) 2 mg 1:1,000 Neb.(mixed with 1ml NS) (R-04) 1 mg 1:10,000 IV/IO per dose q4 min (CA-02, CA-03) 2-10 mcg/min IV Infusion titrated to MAP ≥ 65 (C-02 OLMC)	0.01mg/kg 1:1,000 IM per dose (max single dose 0.3mg) x 1 (PR-03) Do Not administer if < 8kg 0.01mg/kg 1:1,000 IM per dose (max single dose 0.3mg) x 4 q5min (max total **1.2** mg) (PM-01) Do Not administer if < 8kg EMT-B and ILS Providers single dose of 0.15 mg IM (1:1,000) if < 30 kg (PM-01) Do Not administer if < 8kg Epi Pin Jr. < 30 kg (PM-01) Do Not administer if < 8kg 0.5 mg 1:10,000 (5 ml) Neb (PR-03) Epinephrine 0.01 mg/kg IV/IO (max 1mg) (0.1 mL/kg of 1:10,000) Repeat every 3-5 min (PCA -02, PCA-03, PC-01) 0.1-1 mcg/kg/min infusion (PC-01, PM-04, PT-03) 0.1 mcg/kg/min infusion (PCA-02, PM-09)

Medications Quick Reference Chart

Fentanyl Citrate: Adult Pain Management M – 16, Adult Chest Pain/Suspected ACS C – 01, Adult Burns T – 02, Adult Constant Crush Injury > 4 hrs. SO-11, Pedi Pain Management PM – 06, Pedi Burns PT – 01 Clinical Reference:(Adult)CR-35(Pedi)CR-36	1 mcg/kg IV/IM/IN up to 100 mcg may repeat 25 mcg q 10 min (Max total 300 mcg) SBP > 100mmHg As needed until improvement. (M-16, C-01, SO-11) 1 mcg/kg (per dose) q5min with SBP > 100 mmHg (max total up to 400 mcg) (T-02)	1 mcg/kg IV/IM/IN Repeat 0.5 mcg/kg PRN q 5 min(Max total 2 mcg/kg) with SBP >70 + (age in years x 2) mmHg (PM-06) Do Not administer 2nd dose if < 6kg Fentanyl 1 mcg/kg IV every 5 min (Max total 200 mcg) with SBP >70 + (age in years x 2) mmHg (PT-01) Do Not administer 2nd dose if < 6kg
Glucagon: Adult Bradycardia C-02, Adult Asystole/PEA CA-02, Adult Altered Mental Status M-03, Adult Overdose M-15, Pedi Bradycardia PC-01, Pedi Altered Mental Status PM-02, Pedi Overdose PM-09, Pedi Asystole/PEA PCA-02 Clinical Reference:(Pedi)CR-36	1 mg IM (M-03) 3 mg IV (C-02, M-15, CA-02 may use IO route for CA)	0.1 mg/kg (max dose 1 mg) (PC-01, PM-02, PM-09, PCA-02)
Haloperidol (Haldol): Adult Behavioral M-05	5 mg IM, May repeat X 1 dose q 10 min. (M-05)	Ø
Hurricaine/Cetacaine Spray: Nasotracheal Intubation Procedure CP-44	1 metered spray (may repeat x 1)	Ø
Hydroxocobalamin (Vitamin B_{12}) Adult Cyanide M-21 Pedi Cyanide PM-11 Clinical Reference:(Pedi)CR-36	5 grams IV over 15 min (M-21)	70 mg/kg IV at 15mL/min (Max dose 5 grams) (PM-11)
Ibuprofen (Motrin): Adult Fever/Infection M-09 Adult Pain Management M-16	Up to 400 mg PO (M-09) Up to 600 mg PO (M-16)	Ø
Ipratropium Bromide (Atrovent): Adult Respiratory Distress R-04 Adult & Pedi Drowning T-04 Pedi Respiratory Distress PR-03	0.5 mg (unit dose) Neb. X 1 (mixed with Albuterol) (R-04, T-04)	0.5 mg (unit dose) Neb. X 1 (mixed with Albuterol) (T-04) 0.5 mg (unit dose) Neb. X 3 (mixed with Albuterol) (PR-03)
Lidocaine: Adult Wide Complex Tachycardia C-05, Adult Pulseless VF/VT CA-03, Adult Persistent Pulseless DSED CA-06 Adult Eye Injury/Complaint M-08, Pedi Pulseless VF/VT PCA-03, Pedi Wide Complex Tachycardia PC-03 Universal IV Access U-02 Clinical Procedure (IO) CP-38 Clinical References: (Pedi Infusion) CR-25 Clinical Reference:(Adult)CR-35 (Pedi)CR-36	1.5 mg/kg IV/IO q5min (max 3mg/kg) (CA-03, CA-06, C-05) If converts, **OLMC** for additional bolus doses of 1.5 mg/kg. 100mg in each bag of NS for eye irrigation (M-08) 40 mg for pain of IO infusion (U-02, CP-38)	1mg/kg IV/IO q 5 min (Max 3 mg/kg) (PC-03) 1 mg/kg (max total dose 100 mg) May repeat x 2 (PCA-03) 20-50 mcg/kg/min infusion (PC-03, CR-25)
Magnesium Sulfate 50%: Adult Respiratory Distress R-04, Adult Wide Complex Tachycardia C-05, Adult Pulseless VF/VT CA-03, Adult Persistent Pulseless DSED CA-06, Obstetrical Emergency OB-02, Pedi Respiratory Distress PR-03, Pedi Pulseless VF/VT PCA-03, Pedi Wide Complex PC-03, Clinical Reference: (Pedi Infusion) CR-36	2 grams IV place into 50ml/NS and infuse over 20 min (R-04) 2 grams IV slow push (CA-03, CA-06 may use IO for CA) (Push over 5 min for C-05) 4 grams IV place into 50ml/NS and infuse over 5 minutes (OB-02)	50mg/kg IV over 20 minutes (max dose 2 grams) (PR-03, PC-03, CR-26) 50 mg/kg slow IV/IO May repeat same dose q- 5 minutes until a maximum total dose of 2 grams. (PCA-03)

Medications Quick Reference Chart

Methylprednisolone (Solu-Medrol): Adult Allergic Reaction M-02, Adult Respiratory Distress R-04, Adult Respiratory Distress Spcl. Ops. SO-01 Pedi Allergic Reaction PM-01, Pedi Respiratory Distress PR-03 Clinical Reference:(Pedi)CR-36	125 mg IV (M-02, R-04, SO-01)	2 mg/kg IV (PM-01, PR-03 IV/IM route)
Midazolam: Adult Induced Hypothermia CA-04, Adult Bradycardia C-02, Adult Atrial Fib. with RVR C-03, Adult SVT C-04, Adult Wide Complex Tachycardia C-05, Adult Behavioral M-05, Adult Excited Delirium M-07, Adult Hyperthermia, Environmental M-10, Adult Overdose M-15, Adult Seizure M-17, Pedi SVT PC-02, Pedi Wide Complex Tachycardia PC-03, Pedi Seizure PM-07, Pedi Overdose PM-09 Clinical References:(Pedi)CR-36	**Anti Convulsant:** 5 mg IM/IN/IO/IV May repeat PRN max total dose 10 mg with SBP > 100 mmHg (M-17) **Sedation:** 2.5 – 5.0 mg IV/IO May repeat PRN max total dose 10 mg with SBP > 100 mmHg **-OR-** 5 mg IM/IN May repeat PRN max total dose 10 mg with SBP > 100 mmHg (CA-04, C-02, C-03, C-04, C-05, M-05, M-07, M-10,M-15)	**Anti Convulsant:** 0.1mg/kg IV/IO/IM/IN (max total 5 mg) titrated to effect with SBP >70 + (age in years x 2) mmHg (PM-07) Do Not administer if < 5kg **Sedation:** 0.05 mg/kg IV/IO (max total 5 mg) titrated to effect with SBP >70 + (age in years x 2) mmHg (PC-02, PC-03, PM-09) Do Not administer if < 5kg
Naloxone (Narcan): Adult Overdose M-15, Newly Born OB-03, Pedi Overdose PM-09 Clinical Standard CS-20 Clinical Reference:(Pedi)CR-36	Up to 2 mg slow IV/IN/IM (M-15) If respirations depressed	0.1 mg/kg IV(OB-03, PM-09 may also use IN route in OD) If respirations depressed
Nitroglycerin: Adult Chest Pain/Suspected ACS C-01 Adult Pulmonary Edema R-03	0.4 mg SL continuous with SBP ≥ 100 mmHg (R-03, C-01 and/or pain free with ACS) 1" topical paste with SBP ≥ 100 mmHg (R-03, C-01)	Ø
Norepinephrine (Levophed): Adult Induced Hypothermia CA-04, Adult Hypotension M-11, Adult Suspected Sepsis M-23, Adult Multi. Trauma T-07, Clinical References: (Adult Infusion) CR-03	2 – 12 mcg/minute Titrated to MAP ≥ 65 (CA-04, M-11, M-23, T07, CR-03)	Ø
Ondansetron (Zofran): Adult Eye Injury/Complaint M-08, Adult Nausea/Vomiting M-13, Adult Hyperthermia, Environmental M-10, Pedi Nausea/Vomiting/Diarrhea PM-05, Pedi Hyperthermia, Environmental PM-08 Clinical Reference:(Pedi)CR-36	4 mg ODT single dose PO may repeat x1 q15 min. (M-08, M-10, M-13) 4 mg IV/IM single (undiluted) dose given over > 30 sec. may repeat x1 q 15 min. (M-10, M-08, M-13)	0.1 mg/kg IV single (undiluted) dose given over > 30 sec.(max dose 4 mg) (PM-05, PM-08)
Oral Glucose: Adult Altered Mental Status M-03 Pedi Altered Mental Status PM-02 Clinical Standard CS-20	15 grams if patient is not obtunded. May repeat x1 q 15min (M-03)	7.5 grams if Pt. able to protect Airway (PM-02)
Otrivin (Afrin) nasal spray: Epistaxis M-22, Nasotracheal Intubation Procedure CP-44	2 sprays per effected nostril (M-22, CP-44)	Ø

Medications Quick Reference Chart

Proparacaine Hydrochloride: Adult Eye Injury/Complaint M-08	2 gtts in effected eye (M-08)	1 gtt in effected eye (M-08)
Pyridoxine: Adult Toxic Exposure – Hydrazines (SO-07) Clinical Reference:(Adult)CR-35	25 mg/kg IV over 5 min.(SO-07)	Ø
Rocuronium Bromide: Adult Induced Hypothermia CA-04 Clinical Reference:(Adult)CR-35	1 mg/kg x 1 IV/IO to max of 100mg (with Advanced Airway only) (CA-04)	Ø
Sodium Bicarbonate: Adult Wide Complex Tachycardia C-05, Adult Asystole/PEA CA-02, Adult Pulseless VF/VT CA-03, Adult Persistent Pulseless DSED CA-06, Adult Overdose M-15, Pedi Bradycardia PC-01, Pedi Asystole/PEA PCA-02, Pedi Overdose PM-09, Toxic Exposure Chlorine SO-04, Adult Constant Crush > 4 hours SO-11 Clinical Reference:(Adult)CR-35(Pedi)CR-36	1 meq/kg x 1 IV (C-05, CA-02, CA-03, CA-06 may use IO route in CA) 50 mEq (1 amp) IV followed by a maintenance drip of 100 mEq (2 amps) in 1000 mL of NS and run at 100mL/hr (M-15) 50 mEq (1 amp) in 1000 mL NS wide open IV (SO-11) Nebulized: Place 2 ml sodium bicarbonate 8.4% (standard sodium bicarbonate) into 2 ml of sterile water administered by hand-held nebulizer. May be repeated every 20 minutes. Max dose total of 2 times. (SO-04)	1meq/kg IV/IO (PC-01, PCA-02, PM-09)
Terbutaline Sulfate: Adult Respiratory Distress Spcl. Ops. SO-01	0.25 mg SQ may repeat q15min x 2 prn (SO-01)	Ø
Vecuronium Bromide: Adult Induced Hypothermia CA-04 Clinical Reference:(Adult)CR-35	0.1 mg/kg to max of 10 mg (with Advanced Airway only) (CA-04)	Ø
Xylocaine gel: Nasotracheal Intubation Procedure CP-44 Gastric Tube Insertion Procedure CP-32 (nasal application without intubation)	1 unit dose (packet) (CP-32, CP-44)	Ø

Clinical Procedures

Version 020415 (MD 14-09)

OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

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12 Lead ECG

Legend		
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

Any patient ≥ 30 years old with the following:

- Suspected cardiac patient
  - Pain between navel and jaw
  - Pressure, discomfort, tightness or heartburn
  - "Heart racing", "palpitations", or "heart too slow"
  - CHF signs and symptoms
- Electrical injuries
- Syncope
- Severe Weakness
- New onset stroke symptoms
- Difficulty breathing (no obvious respiratory cause)
- Suspected overdose
- Patient of any age with any of the above symptoms **AND** history of: (cardiac, diabetes, obese, family history of early CHD, or recent cocaine use)

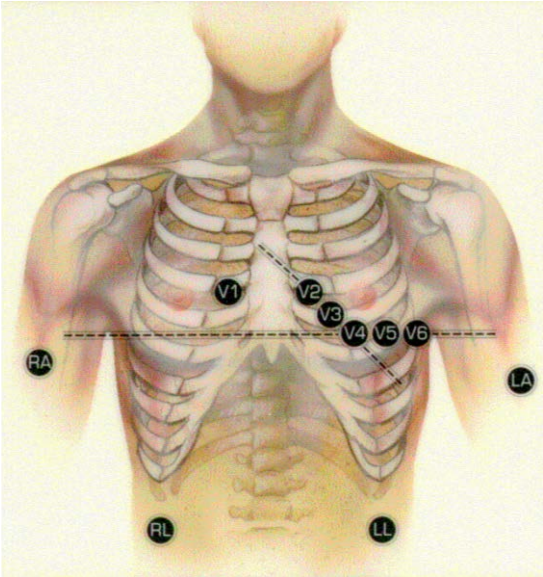
If the patient meets any of the above criteria: EMT providers are to attach ECG electrodes ASAP <u>and</u> ALS providers are to obtain a 12 lead ECG within 5 minutes of ALS patient contact. IF STEMI, transmit 12 Lead ASAP.

Procedure:

EMT provider:

1. Assess patient.
2. Administer oxygen as patient condition warrants.
3. Expose chest and prep as necessary. Modesty of the patient should be respected as best as possible.
4. Apply chest leads and extremity leads using the following landmarks:

- RA -Right arm
- LA -Left arm
- RL -Right leg
- LL -Left leg
- V1 -4th intercostal space at right sternal border
- V2 -4th intercostal space at left sternal border
- V3 -Directly between V2 and V4
- V4 -5th intercostal space at midclavicular line
- V5 -Level with V4 at left anterior axillary line
- V6 -Level with V5 at left midaxillary line



Paramedic:

5. Prepare ECG monitor and connect patient cable with electrodes.
6. Enter the required patient information (patient name, etc.) in to the 12-lead ECG device.
7. Instruct patient to remain still.
8. Press the appropriate button to acquire the 12 Lead ECG.
9. For patients with cardiac complaint, keep all leads connected at all times practical to allow automatic ST-segment monitoring to proceed.
10. Monitor the patient while continuing with the treatment protocol.
11. Document the procedure, time, and results on/with the patient care report (PCR).

Medication Administration and Cross Check

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

Before administering any medication, the provider should know:

1. Is this medication indicated? (why are you using it?)
2. What is the safe and effective dose?
3. What is the correct administration route?
4. Does the patient have an allergy or other contraindication to this medication?
5. What are the expected effects, side effects and adverse effects?
6. Is the medication expired?

Patient Considerations:

The "Six Rights" of medication administration:

1. Right patient –indicated for this patient; no contraindications; no allergies
2. Right drug – the correct name (trade name vs. generic name); **correct concentration**
3. Right dose –Per System dosing chart; if medication not listed use protocol
4. Right route – oral, topical, IV/IO/IN/IM, nebulized
5. Right time – slow IVP vs. rapid IVP vs. infusion over time
6. Right documentation

Procedure:

1. Assemble required delivery devices for medication to be administered
2. Tap vial/ampule gently until all medication is at the bottom as needed
3. Cleanse ampule with a Chlorohexadine prep pad
4. Remove sterile cap to access the vial or safely snap the ampule neck at the scored line to access the medication
5. **With the appropriate size needle or needleless device, draw up ONLY the amount to be administered in a single dose per System dosing chart or protocol if medication is not listed in chart**
6. Perform System Medication Safety "Cross Check" prior to administration of the medication
7. Administer the medication via the determined route and time
8. Dispose of the medication delivery devices (sharps and glass containers) in approved sharps containers

Documentation:

Correct documentation of medications administered will include:

1. Time of medication administration
2. Route of administration
3. Site location for IM medication
4. Dose or volume administered
5. Name of provider administering the medication
6. Any medication related complications and steps made to correct
7. Patient's response to medication treatment

Other Requirements

1. Prefilled syringe medications must remain in their original box package until prepared for patient use
2. The current COG System Medication and Infusion Dosing Charts and the Medication Cross Check Safety Tool are required for each medication administration

Medication Administration Cross Check (Check List)

- ❑ **Provider 1** initiates the procedure by stating "cross-check" or "med-check"

- ❑ **Provider 2** responds that he or she is "ready." It is important to avoid using ambiguous responses such as "okay" since they may be interpreted many different ways and they do not effectively reflect the provider's condition.

  It is essential that provider 2 participate in an engaged manner and not passively participate. [This is a known weakness of the procedure, and human factors/ patient safety literature and research has demonstrated that when an effective attentional capture does not occur by those participating in such a procedure, errors may penetrate the barrier and ultimately reach the patient.]

- ❑ **Provider 1** states the phrase "I am going to give" and provides the following information: the dose (using the System dosing chart or protocol), drug name, route, rate, patient weight and the reason.

  If and only if there is concurrence on provider 2's behalf, does the cross-check procedure continue. Provider 2 verifies using System dosing chart or protocol (If provider 2 does not agree that the drug, dose, route, rate, patient weight or reason are appropriate, then he or she will need to resolve the conflict and make corrections as necessary and provider 1 will need to begin again. Other reasons why provider 2 may not agree include perhaps contraindications that he is aware of, but provider 1 has not been made aware of yet.)

- ❑ **If provider 2 agrees**, he or she responds with the question "are there contraindications?" or simply "contraindications?" [This can be colloquial – it does not have to be robotic or verbatim, but the specific questions must be asked.]

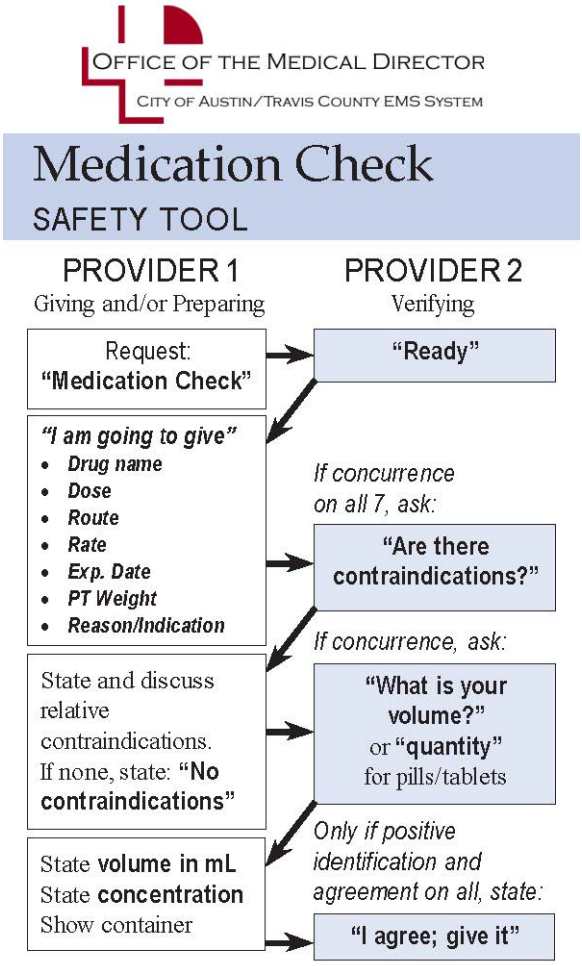
- ❑ **Provider 1** must check the expiration date if he or she has not done so already, verify that the patient's VS are appropriate, and any drug allergies. Provider 1 should respond either by saying "no contraindications" or by stating any relative contraindications present.

- ❑ **If provider 2** concurs, he or she response with the question "what's your volume?" or simply "volume?"

- ❑ **Provider 1** should state the drug concentration, the volume he or she intends to deliver, and should show the vial to provider 2 (if it is safe to do so, such as the other provider is not driving, etc.)

- ❑ **If provider 2 agrees** after making a positive visual verification, he or she should respond with the phrase "sounds good" or "I agree" and the order to "give it" in some form or another, again, avoiding ambiguous words like "okay."

Note: If the patient condition changes before the medication is administered, and/or an interruption occurs during the cross-check; return to the beginning of the cross-check.



Adapted with permission from
Wichita-Sedgwick County EMS System

AED

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Patients in cardiac arrest (pulseless, non-breathing)

Contraindications:

- None

Notes/Precautions:

- Age < 8 years, use Pediatric Pads, if available, or if device has "energy attenuating" key, be sure to activate key.
- If Pediatric pads are **not** available use Adult pads
- If AED Pads touch due to patient size **or** use of a Lucas Device, use an Anterior-Posterior pad placement.

Procedure:

1. **If multiple rescuers available, one rescuer should provide uninterrupted chest compressions while the AED is being prepared for use.**
2. Apply defibrillator pads per manufacturer recommendations. Use alternate placement when implanted devices (pacemakers, AICDs) occupy preferred pad positions.
3. Remove any medication patches on the chest and wipe off any residue.
4. Turn on AED and follow prompts.
5. Keep interruption in CPR as brief as possible.
6. If shock advised, **Assertively state "CLEAR" and visualize that no one, including yourself, is in contact with the patient then press the shock button**
7. Immediately return to chest compressions.
8. If no shock advised, immediately return to chest compressions.
9. Allow AED to analyze when prompted (approximately 2 minutes). Perform pulse check at this time.
10. Repeat steps 6 through 8.
11. **Keep interruption of CPR compressions as brief as possible. Adequate CPR is a key to successful resuscitation**

If pulse returns:

See Post Resuscitation Protocols CA-05 or PCA-04

Foreign Body Airway Obstruction (Conscious Patient)

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Sudden onset of respiratory distress often with coughing, wheezing, gagging, or stridor due to a foreign-body obstruction of the upper airway
- Respiratory arrest where ventilation cannot be accomplished after repositioning of airway

Procedure:

If the victim remains conscious:

1. Assess the degree of foreign body obstruction.
   - Do not interfere with a mild obstruction, allow the patient to clear their airway by coughing
   - In severe foreign-body obstructions, the patient may not be able to make a sound. The victim may clutch his/her neck in the universal choking sign
2. **For an infant**, deliver five (5) back blows followed by five (5) chest thrusts repeatedly until the object is expelled or the victim becomes unresponsive (CP-4A).
3. **For a child**, perform a sub diaphragmatic abdominal thrust (Heimlich Maneuver) until the object is expelled or the victim becomes unresponsive (CP-4A).
4. **For adults**, a combination of maneuvers may be required.
   - First, sub diaphragmatic abdominal thrusts (Heimlich Maneuver) should be used in rapid sequence until the obstruction is relieved or the victim becomes unresponsive (CP-4A).
   - Chest thrusts should be used in obese patients and in patients who are in the late stages of pregnancy

Document the method (s) used and the result of these procedures in the Patient Care Report (PCR/ePCR).

Foreign Body Airway Obstruction (Unconscious Patient)

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Unconscious patient with FBAO.

Procedure:

If the victim is or becomes unresponsive; safely lower patient to hard surface and **Initiate Pit Crew Positions**.

1. **Position 1**: Begin 100 Chest Compressions immediately with Metronome, alternates compressions, attempted ventilations and periodic pulse checks with Position 2.
2. **Position 2**: Activates Metronome, applies AED pads, alternates 100 compressions, attempted ventilations and periodic pulse checks with Position 1.
3. **Position 3**: Reposition Airway with (head tilt chin lift or jaw thrust) **Do not insert OPA or BIAD or add ITD until Airway is opened**. **Do not perform blind finger sweeps in the mouth and posterior pharynx. This may push the object farther into the airway.** Look in the mouth before attempting each ventilation (10 – 12 per minute). If a foreign-body is visible, remove it and assess for a pulse. Continue cycle of Chest Compressions, visualization then attempted ventilations, until the airway is open/clear. Use suction as needed to assist in clearing the Airway.
4. Paramedic and Intermediate credentialed providers should assume **Position 3** upon arrival and visualize the posterior pharynx with a laryngoscope to potentially identify and remove the foreign-body using Magill forceps.

If the **FBAO is removed <u>and</u> patient has pulses:**

1. **Position 1 & 2**: Stop Chest Compression Cycle and support patient with 10 – 12 ventilations per minute (as needed) with O2 and, provide ongoing periodic pulse checks.
2. **Position 3**: Secure and maintain patient's open Airway and continues to hold mask seal (as needed) during patient ventilations.

If the patient **becomes pulseless with FBAO in place:**

1. **Position 2**: Immediately Activate AED and follow prompts.
2. **Position 1, 2, and 3**: Continue efforts indicated above to relieve continuing obstruction.

If the patient **becomes pulseless <u>and</u> FBAO has been removed or relieved:**

1. **Position 1, 2, and 3**: Activate Pit Crew Resuscitation efforts including all Airway adjuncts.

Document the methods (s) used and the result of these procedures in the Patient Care Report (PCR/ePCR).

Alternative Venous Access

P EMT-P P

Clinical Indications:

- Venous access when traditional means are unsuccessful
- Only in those patients with life-threatening situations such as cardiac arrest, lethal arrhythmias, or in-extremis from a readily treatable cause (i.e., CHF)

Contraindications:

- Patients where traditional IV access is available

Notes/Precautions:

- Venous access devices can be complicated. Consider contact with OLMC for guidance
- Alternate access devices provide a direct line into patient circulation; therefore, the introduction of air can be extremely hazardous
- Do not remove injection cap from catheter or allow IV fluids to run dry

Procedure:

Broviac / Hickman / Groshong and other double and triple lumen catheters

1. Silicone tube inserted into the distal superior vena cava or right atrium, usually via the cephalic vein. The catheter enters the skin through an incision in the chest. Most lines are kept heparinized and protected via an injectable cap.
2. Select appropriate port for access. If two are available, access the blue or brown port.
3. Thoroughly cleanse injectable port cap with chlorohexadine.
    - Insert an 18-gauge needle attached to a 12 cc syringe into injectable port cap and aspirate 10 mL of blood from catheter (this prevents an inadvertent anticoagulant bolus from occurring). Dispose of aspirated blood
    - If ports are needleless, use appropriate needleless adapter
4. If at any time you are unable to aspirate blood or infuse fluids, do not use line as clotting may have occurred.
5. Attach IV line (attached to an 18-20 gauge needle) into injection port. Begin IV fluid flow and adjust appropriately.
6. Medications are injected through the IV lifeline.

PICC Line (Peripherally Inserted Central Catheter)

1. Usually inserted into the right atrium via the antecubital vein.
2. Select a port on one of the catheters. When two sizes are available, select the larger. Cleanse port with chlorohexadine.
3. Attach a needle to a 10 cc syringe and draw up 5 cc of normal saline (NS). Insert needle into port and attempt to inject NS. If resistance is met, withdraw needle and attempt same procedure on different port. Do this until you find catheter that does not present with resistance to administration of NS. If resistance continues, do not use either port.
4. When no resistance is met, inject contents of syringe into catheter and then draw back to achieve blood flash, indicating successful access.
5. Remove syringe, attach IV tubing, and proceed as normal, opening line and insuring patency.

Alternative Venous Access

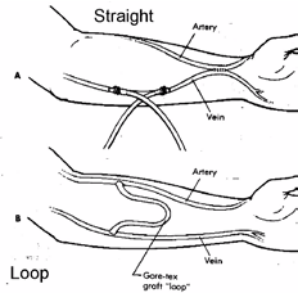
Internal Subcutaneous Infusion Ports (portacath)

1. Unless patient is in cardiac arrest, access should not be attempted without specialized Huber needle.
2. Patients with a pulse: Inquire if patient has Huber needles available. If so, proceed as outlined. If no Huber angle needles are available, DO NOT ACCESS PORT WITH REGULAR NEEDLES.
3. Patients in cardiac arrest: Access may be obtained using a regular 18 gauge needle when Huber needles are not available. Do not use unless absolutely necessary as a regular needle may destroy the self- sealing core, rendering the port useless.
4. Locate the site by visualization and palpation. These ports are generally found in the upper chest and present as a dome shaped protrusion.
5. Prepare site as if starting an IV.
6. Using a non-coring Huber angle needle attached to a syringe, insert into the site at a 90-degree angle until resistance is met.
7. Inject saline into port and aspirate blood (withdraw 10 ml of blood and waste) If resistance is met or blood cannot be aspirated, withdraw needle and do not attempt further access at this site.
8. With successful attempt, remove syringe, attach IV tubing, and proceed as normal, opening line and insuring patency.

Hemodialysis AV-FISTULAS / AV-GRAFTS

1. A tube that diverts blood flow from an artery to a vein. Typically seen in renal failure patients.
2. Prior to access, check site for bruit and thrills, if none are present do not use.
3. Access fistula on venous side (side with weaker thrill in patient with a pulse) using 18 to 16 gauge angiocath in the same manner as intravenous access.
4. Remove catheter, and use only the needle if accessing an AV-Graft to avoid tearing synthetic material.
5. If patient does not have a pulse, either side may be accessed.
6. Inflate BP cuff around IV bag to maintain flow of IV fluids.
7. If unsuccessful in accessing site (no obvious blood return or flow of fluids), hold direct pressure over site for 5-8 minutes for a fistula and 8-15 minutes for a graft to prevent hemorrhaging. Do not continue attempting to access.

Multi-lumen Catheter	Internal Subcuntaneous Port	PICC Line	Hemodialysis Fistula/Graft



Adult Assessment

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

Any patient requesting a medical evaluation that is too large to be measured with a PEDIA Tape or ≥ 37 Kg.

Procedure:

1. Scene size-up, including appropriate PPE, scene safety, environmental hazards assessment, need for additional resources, bystander safety, and patient/caregiver interaction.
2. Initial assessment includes a general impression as well as rapid evaluation of the status of a patient's airway, breathing, and circulation, mental status (e.g., AVPU, GCS) and disability (e.g.motor/neuro deficits, pupil response).
3. Assess the need for and complete any critical interventions. Manage additional system resources as appropriate.(request additional units or where appropriate downgrade or cancel responding units).
4. Perform a focused history and physical based on patient's chief complaint making efforts to protect patient privacy and modesty. Complete secondary exam to include a baseline set of vital signs as directed by patient complaint or protocol.
5. Maintain an on-going assessment throughout transport; to include patient response to/possible complications of interventions, need for additional interventions, and assessment of evolving patient complaints/conditions.
6. Document all findings and information associated with the assessment, performed procedures, and any administration of medications on the PCR.

Pediatric Assessment

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Any child that can be measured with the PEDIA Tape or < 37 Kg

Procedure:

1. Scene size-up, including appropriate PPE, scene safety, environmental hazards assessment, need for additional resources, bystander safety, and patient/caregiver interaction. Take reasonable steps to protect patient privacy and modesty.
2. Assess patient using the pediatric triangle of ABCs:
   - Appearance: (TICLS) tone, interactiveness, consolability, look/gaze, and speech/cry
   - Work of breathing: evaluate for head bobbing, grunting, absent or abnormal airway sounds, use of accessory muscles, nasal flaring, body positioning, irregular or gasping respirations
   - Circulation to skin: pallor, mottling, cyanosis
3. Assess disability (motor function, sensory function, pupils).
4. Determine responsiveness appropriate for age (AVPU, GCS, etc.).
5. Perform spinal motion restriction, if suspicion of spinal injury.
6. Color code using PEDIA Tape.
7. Perform a focused history and physical exam. Pediatric patients unable to verbalize their own complaint should be fully exposed for assessment. Recall that pediatric patients easily experience hypothermia and thus should not be left uncovered any longer than necessary to perform an exam.
8. Record vital signs:
   - Ideally the use of infant or child/pediatric BP cuff sizes when appropriate and available
     - 50th percentile BP estimate = (age in years x 2) + 90 mm Hg
     - Hypotension when BP ≤ (age in years x 2) + 70 mm Hg
   - To assess perfusion when obtaining a BP is not possible:
     - Age appropriate heart rate
       - *Tachycardia is usually the most common sign of compensated shock in children,*
       - *BP doesn't drop until about 30% of circulating blood volume is lost*
     - Mottled extremities
     - Decreased peripheral pulses compared to central, cool extremities
9. Include Immunizations, Allergies, Medications, Past Medical History, last meal, and events leading up to injury or illness where appropriate.
10. Treat chief complaint as per protocol.

Auto-injector Delivered Medication

B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- When protocol indicates medication delivery via auto-injector
- When other administration routes are unsuccessful or unavailable

Contraindications:

- None

Notes/Precautions:

- Appropriate equipment
- Chlorohexadine wipe and Band-aids
- Appropriate injection sites
- Do NOT place thumb over either end of the auto-injector at any time.

Procedure:

1. Prepare equipment.
2. Check label, date, and appearance of medication.
3. Locate appropriate injection site.
   - Vastus lateralis located on the lateral aspect of the thigh
   - Injection is given into the mid thigh
4. When time permits expose target site and prep with chlorohexadine (not required as injectors are designed to work through clothing.).
5. Remove the auto-injector from its storage container.
6. **Do Medication Administration Cross Check**
7. Form a fist around the auto-injector with black tip facing down. Do NOT place thumb over either end of the auto-injector.
8. Remove the Gray or Blue safety cap with your other hand.
9. Position at a 90 degree angle the Black or Orange “needle end” cap against the desired injection site press very firmly listening for an audible “click.”
10. Hold auto-injector in place for 10 seconds to allow complete delivery of medication.
11. Remove auto-injector and dispose of the sharp in an appropriate container.
12. Massage the injection site for 10 seconds to speed delivery of the medication.
13. Observe patient for response to medication.
14. All patients receiving auto-injector medications should be transported to the hospital for further evaluation and observation.

Beck Airway Airflow Monitor (BAAM)

P EMT-P P

Clinical Indications

- As an adjunct to blind nasotracheal intubation in the patient with spontaneous respirations
- As an aid to re-confirming airway placement or re-assessing respiratory effort in the intubated patient with respiratory effort

Contraindications

- Apnea, or inability to hear device during endotracheal tube insertion due to ambient noise
- Not to be used as the primary method for assessing airway placement in the intubated patient

Notes/Precautions

- An unobstructed endotracheal tube with its tip located in the pharynx can also produce the whistle sound. Always confirm proper tube placement
- Due to the narrow aperture of the BAAM® device, it is never to be left attached to the endotracheal tube for greater than 15 seconds at any one time for assessment of the previously intubated patient. Partial airway obstruction, hypoxia and increased airway pressure can occur if left in place for prolonged periods

Procedure

1. Pre-oxygenate and/or ventilate while preparing the patient for nasotracheal intubation;
2. Attach BAAM® device to the 15 mm adapter of the appropriate sized endotracheal tube. The device will attach to the tube only one way.
3. Proceed with nasotracheal intubation. As the ET tube nears the larynx an audible increase in whistling will be heard from the device, indicating that the tip of the endotracheal tube is near the entrance to the trachea.
4. Carefully advance the endotracheal tube through larynx, into the trachea when device and airway sounds are at their peak.
5. Quickly remove the BAAM® device and begin ventilating the patient.
6. Confirm tube placement by ETCO2 and auscultation.

Blood Glucose Assessment

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Any patient with an altered mental status
- Patients with metabolic or endocrine disorders, and presenting with non-specific complaints
- Bradycardia or hypothermia in infants
- Stroke Assessment

Procedure:

1. Gather and prepare equipment.
2. Cleanse site with Chlorohexadine
3. Blood samples for performing glucose analysis should be obtained through a finger-stick (heel for infants). Venous blood samples may produce artificially high blood glucose values and should be avoided.
4. Place correct amount of blood on reagent strip or site on glucometer per the manufacturer's instructions.
5. Time the analysis as instructed by the manufacturer.
6. Document the glucometer reading and treat the patient as indicated by the analysis and protocol.
7. Repeat glucose analysis as indicated for reassessment after treatment and as per protocol.
8. If any clinically suspicious readings are noted perform quality assurance test immediately after the call and notify a supervisor as appropriate.

Cardiac Pacing

P EMT-P P

Clinical Indications:

- Adult patient with unstable bradycardia (HR <60 and signs of hypoperfusion such as SBP <90 mm Hg, change in mental status, chest pain, CHF)
- Pediatric patients with unstable bradycardia unresponsive to treatable causes (PEDI, SBP < 70 + (age in years x 2) mmHg). Unresponsive to aggressive Oxygenation and Ventilation attempts

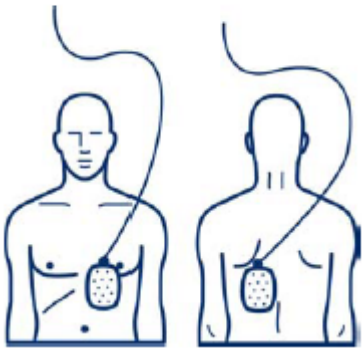
Contraindications:

- Hypothermia with a temperature <86 degrees F

Procedure:

1. Attach standard four lead monitor.
2. Apply defibrillation/pacing pads assuring clean dry contact surface (shave/dry):
   - One pad to anterior left mid chest next to sternum. (medial/inferior to pectoral muscle)
   - One pad to posterior left mid chest next to spine. (medial/inferior to scapula)
3. For pediatric patients use correct size and type pads for pacing and patient weight.
4. Select pacing mode on the monitor.
5. Adjust heart rate to 80 BPM (adult) or 100 BPM (child).
6. Note presence of pacer spikes.
7. Increase output until electrical capture of the rhythm on the monitor.
8. If unable to capture at maximum output discontinue pacing immediately.
9. If capture observed, check for corresponding pulse and assess vital signs.
10. Consider the use of sedation or analgesia.
11. Document the procedure, time of intervention and response in the patient care report.

Anterior-Posterior Placement for Pacing (Standard)



Cardioversion

P EMT-P P

Clinical Indications:

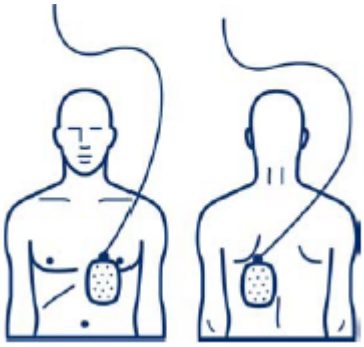
- Unstable tachydysrhythmia with a pulse (ventricular tachycardia, torsade de pointe, SVT, A-fib/Flutter with RVR, etc.) in accordance with the appropriate tachydysrhythmia protocol

Contraindications;

- Repetitive, self-terminating, short-lived tachycardias (i.e., runs of non-sustained VT)

Procedure:

1. Confirm that the rhythm on the monitor coincides with a patient in an unstable condition
2. Set to synchronized cardioversion mode watching for R wave markers on each QRS complex.
3. If the R wave markers do not appear, or appear elsewhere on the ECG, adjust the ECG size or gain up or down until they appear on each R-wave.
   - If markers still do not appear, select another lead or reposition the ECG electrodes
   - If these methods are ineffective unsynchronized cardioversion may be required
4. Apply self-adhesive pads in the anterior/posterior position, ensuring firm contact with patient's skin.
5. Consider the use of pain/sedating medications.
6. Charge device to appropriate energy level per Patient Care protocols and clear all personnel from direct patient contact.
7. Depress and hold discharge buttons until electrical charge is delivered. (There may be substantial delay between pressing the button and the actual discharge of energy).
8. Reassess the patient. If rhythm deteriorates into VF/pulseless VT, switch to asynchronous mode and immediately defibrillate per Patient Care protocols.
9. Document the procedure, time performed and patient response in the patient care report.



Childbirth

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Imminent delivery with crowning

Procedure:

1. Delivery should be controlled so as to allow a slow, controlled delivery of the infant. This will prevent injury to the mother and infant.
2. Consider additional resources as there will be two potential patients.
3. Support the infant's head as it delivers.
4. If the umbilical cord is around the neck, slip it over the head. If unable to free cord from the neck, double clamp the cord and cut between the clamps.
5. Suction the airway with a bulb syringe.
6. While continuing to support the head, gently lower the head to encourage delivery of the anterior shoulder.
7. Once the anterior shoulder delivers gently lift the head and anterior shoulder to allow delivery of the posterior shoulder.
8. Be prepared to support the infant while delivering the remainder of the body.
9. Clamp the cord 6 inches and place second clamp 9 inches from the abdomen and cut the cord between the clamps.
10. Record APGAR scores at 1 and 5 minutes.
11. Follow the **Newly Born Protocol** for further treatment.
12. The placenta will deliver spontaneously, usually within 5-25 minutes of the infant. Do not force the placenta to deliver or pull on the umbilical cord.
13. Massage the uterus and/or initiate breast feeding (as infant and/or maternal condition allows) to stimulate uterine contractions, decrease bleeding and initiate delivery of the placenta. If the placenta delivers it should be retained for inspection. For post-partum hemorrhage refer to the OB Emergencies protocol.

Cincinnati Pre-hospital Stroke Screen

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Assessment of patient currently exhibiting signs and symptoms associated with stroke

Contraindications:

- Unconscious patients unable to participate in the stroke scale

Procedure:

1. Initiate assessment and treatment of the suspected stroke patients in accordance with the Stroke protocol. Utilize STROKE CHECKLIST CR – 33 whenever possible.
2. Ascertain the last time the patient was seen normal to establish the time of **"last known well".**
3. Obtain a blood glucose level according to the blood glucose procedure.
4. Perform the Cincinnati Prehospital Stroke Screen (CPSS).
   - Have the patient smile or show their teeth. Look for asymmetry
   - Assess for arm drift by asking the patient (while sitting upright or standing) to close their eyes and extend their arms, palms up and hold it for 10 seconds. Look for asymmetric pronation (palm turning towards the ground) or drift (one arm drops compared to the other)
   - Ask the patient to say a simple sentence such as "You can't teach an old dog new tricks," looking for incorrect words, slurring or inability to speak
   - All portions of CPSS must be completed. Any abnormality in the screening is positive for stroke
5. If time of "last known well" of current symptoms (as defined above) is ≤ 8 hrs, the blood glucose reading is > 50 and the CPSS is positive declare a STROKE ALERT and initiate transport to a designated Stroke Center.
6. Whenever possible identify a family member or historian to accompany the patient to the hospital.

Cincinnati Prehospital Stroke Screen (CPSS)

Test	Finding
Facial Droop: Have the patient smile or show teeth	❑ **Normal** – both sides of face move equally ❑ **Abnormal** – one side of the face does not move as well as the other side
Arm Drift: Patient closes eyes and extends both arms straight out, palms up, for 10 seconds	❑ **Normal** – both arms move the same or both arms are held steady ❑ **Abnormal** – one arm drifts downward or the palm turns towards the ground (pronator drift*) when compared with the other
Abnormal Speech: Have the patient say "You can't teach an old dog new tricks."	❑ **Normal** – patient uses correct words with no slurring ❑ **Abnormal** – patient slurs words, uses the wrong words, or is unable to speak

***Pronator drift: the forearm will pronate and the arm will drift downwards.**

Inter-Facility Transfer with Precautions

B	EMT - B	B
I	EMT – I	I
P	EMT - P	P

Clinical Indications: Maintaining uniform standards of isolation practices within a medical facility and beyond is essential to protect patients and Health Care Workers (HCW) from acquiring contagious diseases and to prevent colonization. Isolation procedures are consistent with the recommendations of the Centers for Disease Control and Prevention Guideline for Isolation Precautions in Hospitals.

These procedures are specific for the proper inter-facility transfer of all patients identified or suspected of being infected with a communicable disease. **The goal is to establish practical and effective measures for isolating the disease organism, not the patient.**

Contraindications: Not Applicable

Notes/Precautions: Patients with any communicable disease shall be transferred only when medically necessary and with the full knowledge and consent of the receiving facility.

Transport providers within the Austin/Travis County EMS System are responsible for providing care in accordance with this policy.

1. All System Providers are responsible for:
    a. Complying with isolation precautions. Specifically, those outlined in the System Clinical Operating Guidelines
        i. Clinical Procedure 60 - Standard Precautions
        ii. Clinical Procedure 16 – Contact Precautions
        iii. Clinical Procedure 56 – Respiratory Precautions
    b. Precautions may be used in combination for diseases that have multiple routes of transmission.
    c. Providers will ensure the maximum level of PPE will be available and in sufficient quantity to safeguard providers during any required level of patient treatment.
    d. Providers will bring the appropriate amount of sheets to properly undertake patient and stretcher covering.
    e. Providers will wear N-95 respirator masks when transporting patients with probable, suspected or confirmed cases of serious illness with an airborne microbe including, but not limited to TB, Smallpox, SARS, Varicella, and measles (Rubeola).
    f. Appropriate hand hygiene before and after touching the patient.
    g. The application of precautions will be to a level indicated by the transferring facility. Any disagreement as to the appropriate level of PPE to be utilized will defer to the decision of the transferring facility Infection Preventionist or their designee.

Procedure:

Undertaking Patient transport

Departing Transferring Facility

1. Isolated patients are transported only for essential purposes and only using appropriate barriers to prevent transmission. All providers must follow the appropriate isolation precautions and hand hygiene
2. Ensure transferring facility has notified the receiving facility of implementation of isolation precautions.
3. Put on gown, gloves, and a mask if indicated before going into the patient's room.
4. Help the patient on to the stretcher and cover patient with clean sheet. Cover the stretcher rails with sheets. Cover any other areas that will be touched during transport
5. Ensure drainage or infectious area is contained with fresh dressing(s) or impervious coverings prior to transport
6. Remove gown, gloves, and mask (if worn) as you exit the door of the patient's room
7. Wash hands or use alcohol based hand sanitizer
8. Begin movement to vehicle via the designated area by the least traveled route
9. There is no need for PPE precautions except as specified above.
10. Place patient into the vehicle
11. Use Standard Precautions. Don appropriate PPE for anticipated procedures that may be initiated during vehicle transport
12. Non-medical personnel should not be permitted in the patient care compartment during transport.

Arrival At Receiving Facility

1. Re-apply a clean patient cover sheet. Re-cover the stretcher rails with clean sheets. Re-cover any other areas that will be touched during transport.
2. Remove PPE upon exiting the vehicle and upon entrance into the receiving medical facility.
3. Ensure PPE is disposed of in an appropriate container
4. Begin movement to the patient's destination traveling directly to the designated area by the least traveled route
5. Providers shall put on the appropriate PPE which may include gown, gloves, and mask when assisting the patient onto the receiving stretcher or bed
6. Cover the patient with another clean sheet
7. Remove linen from stretcher and dispose of in the appropriate container
8. Utilizing a disinfectant saturated cloth:
    a. Wipe down stretcher
    b. Stretcher hand rails
    c. Other potentially contaminated stretcher mechanisms
    d. Mattress
9. Remove gown, gloves and mask (if worn) at the door of the patient's room
10. Take stretcher into the hall
11. Wash hands or use alcohol based hand sanitizer
12. Clean contaminated environmental surfaces and equipment with approved disinfectant saturated cloth and allow to air dry

Contact Precautions

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Used when the organism is transmitted by direct contact with patient or environmental surfaces
- Patients with large infected ulcers and drainage that is not contained by dressing
- Any drug resistant organism, *Clostridium difficile, Scabies, E. coli O157:H7 and, Noro type Viruses.*

Contraindications:

Not Applicable

Notes/Precautions:

Not Applicable

Procedure:

1. Explain the need for Contact Precautions to the patient.
2. Everyone involved in direct patient care should wear clean gloves and gowns.
3. Gloves and gowns should be removed and hands washed with soap and water prior to leaving the treatment area or upon completion of patient transfer.
4. Additional protection (e.g. masks, face protection, goggles) should be added per Standard Precautions depending on the procedures done. (e.g. wear masks and eye protection for suctioning, intubation, or nebulized medication).

Mobile Crisis Outreach Team (MCOT) Referral Procedure

P EMT-P Transport Qualified P

Purpose:

To establish criteria for A/TC EMS Transport Department referral of persons with acute mental health concerns to approved alternative healthcare resource(s) in order to facilitate more appropriate evaluation and care.

Contraindications:

1. Patients with unexplained persistent or recurring changes in mental status should be referred to the emergency department for evaluation in accordance with Clinical Reference CR-13;
2. Any patient with ongoing bleeding, wounds requiring repair, or suspected head injury should be transported to the emergency department for evaluation in accordance with Clinical Reference CR-13.

Procedure:

Patients with a primary mental health complaint are eligible for consideration for alternative evaluation/destination if the following criteria are met:

1. Patient has no acute medical or traumatic conditions **or** minor superficial abrasions that have been evaluated for underlying injury and addressed as needed by EMS.
2. Patient has not ingested medication (prescription or OTC) outside the normal dosing range.
3. Patient can take p.o. fluids.
4. Pulse is <120.
5. Patients have a blood glucose that is:
   a. >70;
   b. <200 with no history of diabetes;
   c. <300 in patients with a history of diabetes and no complains of abdominal pain, nausea or vomiting.
6. Patients have a blood pressure that is:
   a. SBP <200 and DBP <120; AND no associated symptoms such as headache, neurologic changes, chest pain, or shortness of breath;
   b. Regardless of a known history of hypertension if SBP >160 and/or DBP >100 patient should be advised to seek follow up evaluation of their hypertension by a community physician.
7. Patient should be able to perform activities of daily living (ADLs) independently.
8. Intoxicated patients that otherwise meet all of the other criteria must be able to demonstrate:
   a. The ability to participate in the evaluation process AND
   b. The ability to ambulate safely without assistance.

CPAP

Continuous Positive Airway Pressure Ventilation

B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Congestive Heart Failure/Pulmonary Edema
- Submersion / Drowning
- Chronic Obstructive Pulmonary Disease
- Acute Respiratory Distress

Contraindications:

- Respiratory arrest
- Agonal respirations
- Unconsciousness
- Shock associated with cardiac insufficiency
- Pneumothorax
- Facial trauma, burns

Notes/Precautions:

Possible complications include

- Gastric distention
- Reduced cardiac output
- Hypoventilation
- Pulmonary barotrauma
- Excessive secretions

Procedure:

1. Ensure all necessary equipment is available and assembled.
2. Connect CPAP to O2 source and select liter flow setting to generate appropriate PEEP for patient condition per protocol. 8L = 5PEEP, 10L = 8PEEP, 12L = 10PEEP
3. Oxygen must be flowing prior to placing device on patient's face.
4. Fully explain procedure to patient.
5. Have patient hold mask to face and instruct him/her to breathe slowly and deeply.
6. Once patient is comfortable with mask, securely attach headpiece and tighten to fit.
7. Continuously monitor patient's respiratory status and SAO_2.
8. The adjunctive delivery of an albuterol Neb with the CPAP device is an approved procedure and treatment modality. Patient presentation and distress level should dictate the timing or use of this procedure. The addition of albuterol in this fashion should not create delays in the use of CPAP and, only providers who are trained and appropriately equipped should use this.
9. If the patient decompensates as indicated by:
   - Decreased LOC
   - Decreased SAO_2 (from initial reading with CPAP application)
   - Bradycardia with Hypotension
   - Agonal Respirations
   - Respiratory Arrest
   - Pneumothorax

   Discontinue CPAP and manage the patient per the appropriate Protocol.

CPR – Pit Crew

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Patient in cardiac arrest > 5 days old.
- Patients new born to 5 days old use Protocol OB - 3

Contraindications: None

Notes/Precautions:

- Focus is on:
  - Minimally interrupted compressions
  - Appropriate depth and quality of compressions
  - Consider compressor fatigue and change compressors as needed
  - Team approach
- Infants and small children may require modification of the procedure due to size
- This procedure is based on a 3-person crew of providers (if a 4th person is available, they should assist with setting up BIAD and rotate into a Compressor position
- If LUCAS device is available, Position 1 becomes the operator of LUCAS
- If there is only a 2-person crew, see modified procedure below.

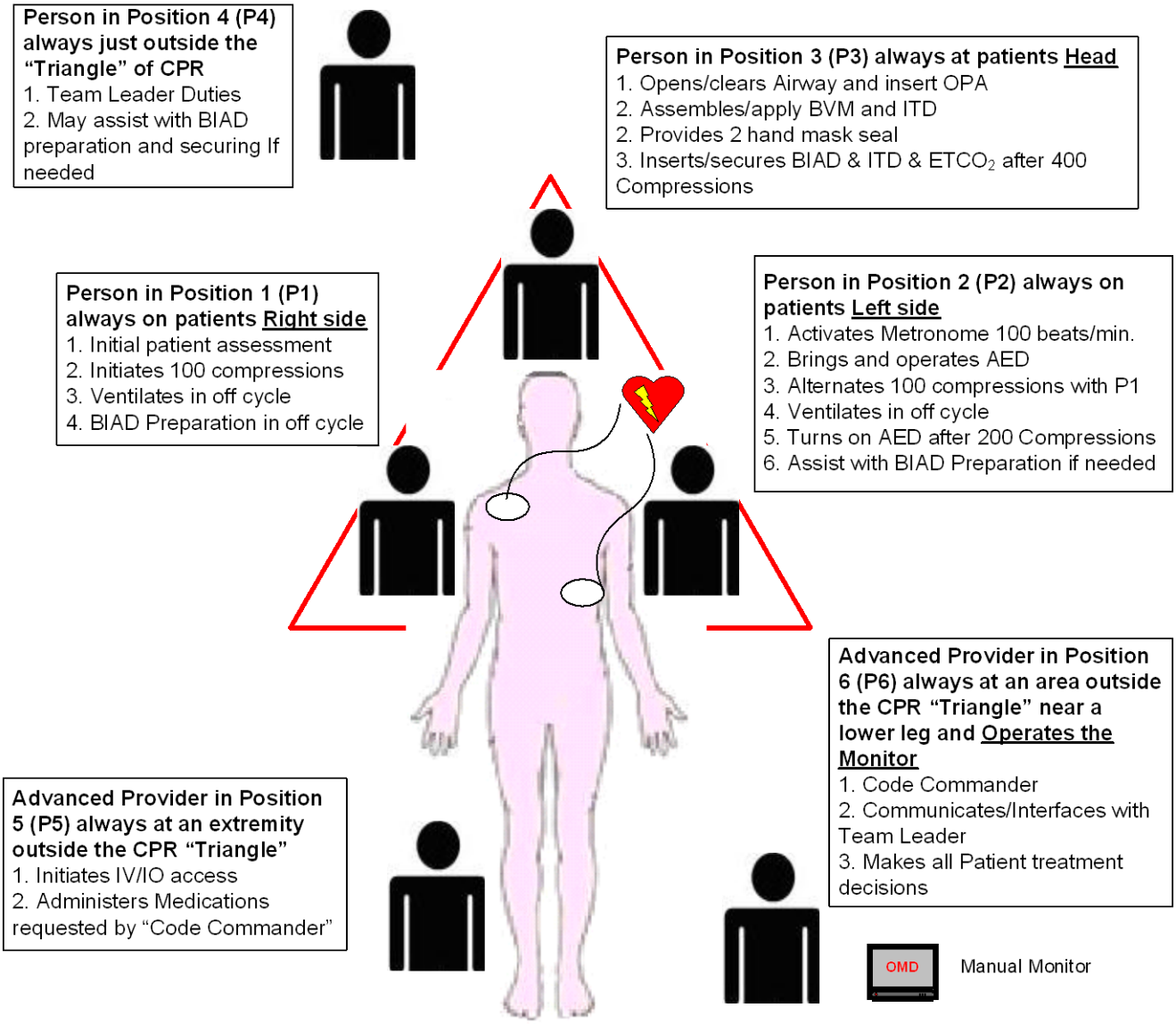
Procedure:

1. First arriving providers:
2. Establish prior to arriving at patient's side, the following responsibilities:
   - **Position 1** (patient's right side)
     - assesses responsiveness/pulses
     - initiates chest compressions immediately if needed
     - checks & pre-assembles BIAD (ventilates BVM when not performing compressions)
     - alternates chest compressions
     - ventilates BVM when not performing chest compressions
     - assembles, applies & operates LUCAS
   - **Position 2** (patient's left side)
     - activates Metronome at 100 beats/minute
     - applies AED pads immediately (Pedi Pads & Lucas device anterior/posterior)
     - operates AED after each 2 minute cycle of compressions (Pedi AED Key if req.)
     - alternates chest compressions with Position 1
     - ventilates BVM when not performing chest compressions
     - may assist with BIAD
   - **Position 3** (patient's head)
     - assembles and appropriately applies all equipment for airway and ventilations (OPA, BVM, ITD, Suction, O2, BIAD, BIAD securing device, ETCO2)
     - opens/clears airway
     - inserts OPA
     - assembles and applies BVM & ITD (ITD not used for ≤ 1 yr. old)
     - turns on timing light on ITD
     - maintains two-hand BVM mask seal
     - inserts & secures BIAD at appropriate time (after 400 chest compressions during 2nd AED rhythm analysis or when able)
   - **Position 4** (if available)
     - rotates and assists wherever needed
     - may function as a "team leader"

3. ALS Integration:
4. Establish prior to arriving at patient's side, the following responsibilities:
   - **Code Commander** (Paramedic in control of monitor)
     - communicates/interfaces with providers performing CPR
     - sets up & operates monitor/defibrillator
     - makes all patient treatment decisions
   - **Intervention Paramedic** (positioned at feet when possible)
     - initiates IV/IO access
     - administers medications at the direction of the code commander
     - anticipates needs of code commander

Below is graphical representation of the Pit Crew CPR Procedure:

CPR Procedure



CPR – Pit Crew

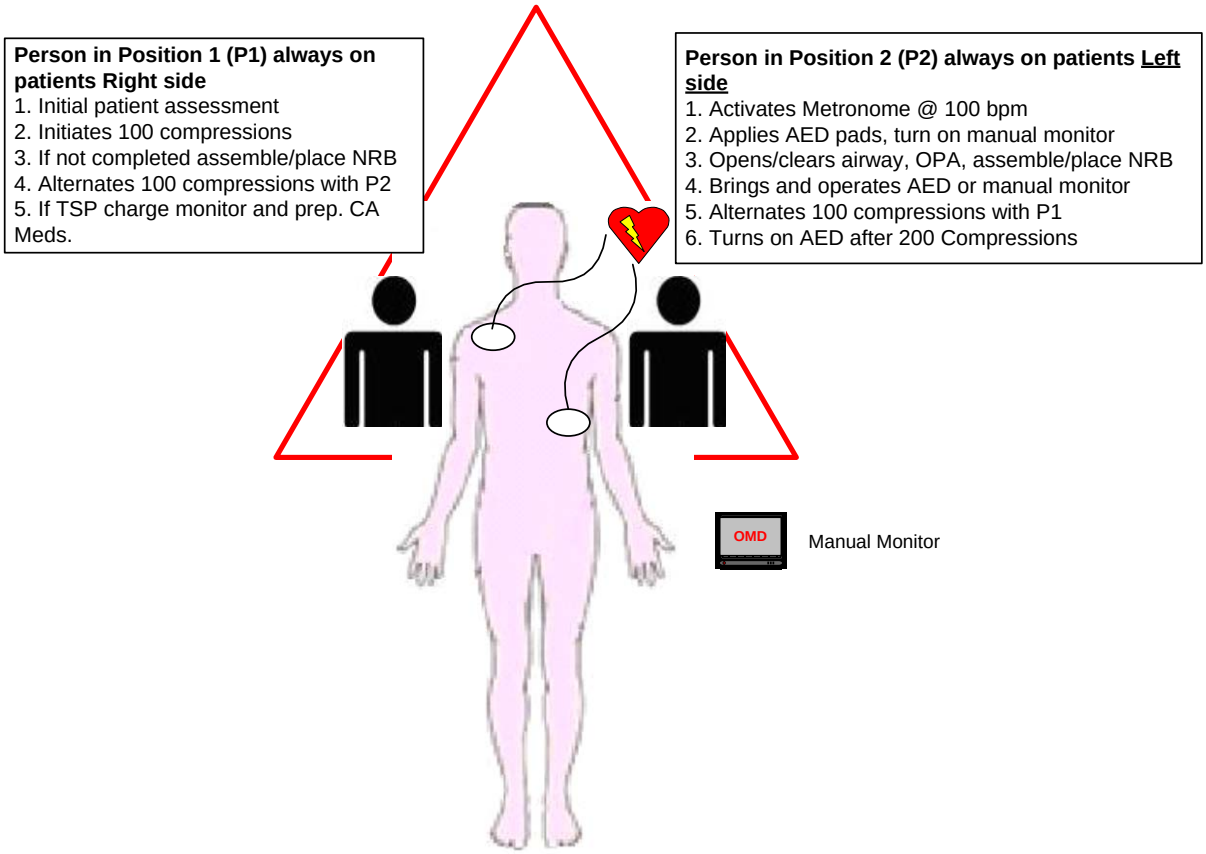
Modified Two (2) Person Version

Procedure:

1. First arriving providers:
2. Establish prior to arriving at patient's side, the following responsibilities:

- **Position 1** (patient's right side)
  - Assesses responsiveness/pulses
  - Initiates 100 chest compressions immediately if needed
  - Alternates 100 chest compressions with Position 2
  - If not completed by Position 2; assemble/place NRB @ 10 – 15 L O2
  - If Transport Provider, may reach over and charge manual monitor at the appropriate 70th compression cycle timelines (at 2 minutes)
  - If Transport Provider, may prepare Cardiac Arrest medications in off cycle
- **Position 2** (patient's left side)
  - Activates Metronome at 100 beats/minute
  - Applies AED pads immediately
  - If using manual monitor only, turn it on at this time
  - Open/clear Airway, insert OPA, assemble/place NRB @ 10 – 15 L O2
  - Operates AED or Manual Monitor after each 2 minute cycle (200 compressions)
  - Alternates 100 chest compressions with Position 1

If Position 1 or 2 is credentialed at ILS or above; may insert IO in off cycle. Once additional trained providers arrive, return to normal Pit Crew operations. Below is a graphical representation of the 2 person Modified Pit Crew CPR Procedure:



BURP Procedure

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- All patients in need of airway protection due to gastric insufflation and/or vomitus entering airway
- As needed during advanced airway procedures to enhance Intubation attempts

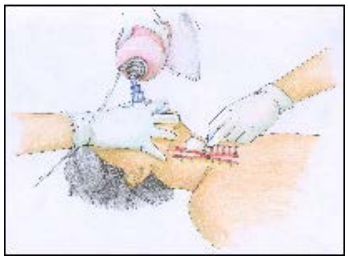
Contraindications:

- Forceful downward cricoid pressure should not be applied.

Notes/Precautions:

- Caution should be exercised when utilizing this technique on children of any age. The cricoid cartilage is not as firm in children as it is in adults. As a result, less pressure is needed to achieve the same effect

Procedure:



1. Locate the cricoid cartilage by:
   - Palpating the protuberant midline portion of the thyroid cartilage ("Adams Apple")
   - Move the fingertip inferiorly until it rests in the soft, flat depression between the thyroid cartilage and the cricoid cartilage
2. When using to assist intubation the provider performing the intubation may place their fingers over those of the provider to direct the movement of the larynx backward, upward, rightward pressure (BURP)to allow visualization.
3. Once visualized the intubating provider may remove their hand requesting the assisting provider to hold that position while they introduce the endotracheal tube.

Decontamination

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Any patient who may have been exposed to significant hazardous materials, including chemical, biological, or radiological weapons

Procedure:

1. HazMat Command will establish hot, warm and cold zones of operation.
2. Ensure that personnel assigned to operate within each zone have proper personal protective equipment and training.
3. In coordination with other public safety personnel, assure that each patient from the hot zone undergoes appropriate initial decontamination. This is specific to each incident; such decontamination may include:
   - Removal of patients from Hot Zone
   - Simple removal of clothing
   - Irrigation of eyes
   - Passage through high-volume water bath (e.g., between two fire apparatus) for patients contaminated with liquids or certain solids. Patients exposed to gases, vapors, and powders often will not require this step as it may unnecessarily delay treatment and/or increase dermal absorption of the agent(s)
4. Initial triage of patients should occur after step #3. Immediate life threats should be addressed prior to technical decontamination.
5. Assist patients with technical decontamination (unless contraindicated based on #3 above). This may include removal of all clothing and gentle cleansing with soap and water. All body areas should be thoroughly cleansed, although overly harsh scrubbing which could break the skin should be avoided.
6. Place triage identification on each patient. Match triage information with each patient's personal belongings which were removed during technical decontamination. Preserve these personnel affects for law enforcement.
7. Monitor all patients for environmental illness.
8. Transport patients per protocol.

Determination of Capacity

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indication:

- To determine if a patient has present mental capacity to make an informed decision to accept or refuse care. All refusals should be conducted in accordance with the Refusal of Treatment/Transport Standard and the Definition of a Patient Standard

Procedure:

1. Determine scene safety.
2. If the patient is suicidal or homicidal contact police immediately.
3. In order to have decision making capacity the patient must be 18 years of age or if a minor, be emancipated, must not be suicidal or homicidal or have had their decision making capacity removed by determination of a court of law.
4. If the above criteria in #3 have been met the patient must be assessed for their ability to demonstrate the following:
   - Does the patient understand their illness or injury and the benefits of treatment and/or evaluation **AND**
   - Does patient understand consequences (including death) of not seeking treatment and/or evaluation for their illness or injury **AND**
   - Does the patient understand the alternatives to immediate care by EMS **AND**
   - Can the patient describe, in his own words, the above components and provide and defend a reason for their decision not to submit to treatment or transportation?
5. Utilize the Determination of Capacity checklist. If there is any uncertainty about the patient's present mental capacity contact On-Line Medical Control.
6. Every individual who has demonstrated present mental capacity has a legal right to refuse medical treatment, even if that refusal is contrary to the beliefs of the provider or may result in potential harm to the patient. It is a healthcare provider's responsibility to provide the patient with information about the risks of refusal and the benefits of treatment and/or evaluation so that their decision is informed.
7. If it is determined that a patient who wishes to refuse care lacks the present mental capacity to do so contact medical control and a supervisor to assist with the process.
8. Document any allowed history and exam, the absence of suicidal or homicidal ideation, the components of the capacity assessment and contact with medical control.

Refer to Clinical Reference CR-29 for Capacity Checklist.

End – Tidal CO_2 Monitoring EZ Cap

B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- As an adjunct for initial confirmation of proper advanced airway placement
- On intubated patients until quantitative capnography becomes available or in the event of End Tidal CO_2 device failure

Contraindications:

- Not used to detect main-stem bronchial intubation
- Not for use during mouth-to-tube ventilation

Notes/Precautions:

- Due to potential increased airway resistance, do not use Pedi-Cap on patients weighing ≥15 kg
- Reflux of gastric contents, mucous, edema fluid, endotracheal medication administration, or nebulization can discolor detector. Contamination of this type may increase resistance, alter color changes, and affect ventilation. If this occurs, discard the device
- If used with ITD in Cardiac Arrest, the ITD must be attached to advanced airway

Procedure:

1. Select appropriate detector according to patient size and weight. Remove detector from packaging.
2. Patient ≥15 kg - Easy-Cap.
3. Patients <15 kg - Pedi –Cap.
4. Match initial color of indicator to the PURPLE color labeled CHECK around the detector window.
   - If the purple color of the indicator is not the same color, or darker, than the area marked CHECK, do not use the detector
   - If the indicator color appears pink, the separate color chart for fluorescent light must be used for accurate color matching
5. Insert advanced airway according to the appropriate procedure.
6. Attach detector to advanced airway; then attach BVM to the detector.
   - If used with an ITD, this must attach to top of ITD and not the advanced airway.
7. Deliver six ventilations of moderate tidal volume. (Interpreting results before confirming 6 breaths can yield false results).
8. After 6 breaths, compare indicator color in the window on full-end expiration. If $C0_2$ is detected, the PURPLE CHECK color will change to TAN (Range C).
9. If the results are not conclusive, and correct anatomic location cannot be confirmed with certainty by other means, the advanced airway should be immediately removed and BVM ventilations resumed.

End – Tidal CO_2 Monitoring Wave Form

B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- All patients with a potential, or actual, change in metabolism, circulation, and/or respiratory function
- Hypoventilation states
- Shock states
- Shortness of breath/Bronchospastic disease
- Chest pain with respiratory distress
- Congestive Heart Failure
- All patients with advanced airways or receiving CPR
- Patients experiencing altered mental status
- Any patient receiving/having received sedating medications or magnesium

Contraindications:

- None

Notes/Precautions:

- A patient with normal cardiac and pulmonary function will have an $ETCO_2$ level between 35-45 mmHg
- When no CO_2 is detected, 3 factors must be quickly evaluated for the cause:
  - Loss of airway function- Improper tube placement, apnea
  - Loss of circulatory function- Massive PE, cardiac arrest, exsanguination
  - Equipment malfunction- Tube dislodgement or obstruction
- All advanced airway patients will have capnography (when available) applied and a printed copy of the post intubation readings attached to the Patient Care Record (PCR/ePCR). A copy of the waveform will also be left with hospital staff
- If used with ITD in Cardiac Arrest, the ITD must be attached to advanced airway

Procedure:

1. Turn on monitor and adjust contrast as needed.
2. Verify ETCO2 display is on and functioning.
3. Open tubing connector door and connect ETCO2 Filterline tubing. Tubing should be connected to monitor before being connected to patient's airway.
4. Connect tubing to patient airway.
5. Record waveform.
6. For patients meeting the indications for capnography the capnometer shall remain in place and be monitored throughout prehospital care and transport.
7. Continuous capnometry should be monitored as airway procedures are performed to aid in verification or correction of an airway problem.
8. Any loss of CO2 detection or waveform should be immediately evaluated for loss of airway or circulatory compromise and should be documented.
9. In all patients with a pulse an ETCO2 reading > 20 is expected. In the post resuscitation patient no effort should be made to lower ETCO2 by modification of the ventilatory rate.
10. In the pulseless patient an ETCO2 waveform with an ETCO2 value > 10 may be utilized to confirm the adequacy of an airway to include BVM and advanced devices when SpO2 will not register.

External Jugular Access

P EMT-P P

Clinical Indications:

- External jugular vein cannulation is indicated in a critically ill patient ≥ 8 years of age who require intravenous access for fluid or medication administration and in whom an extremity vein or intraosseous access is not obtainable
- External jugular cannulation can be attempted initially in life threatening events where no obvious peripheral site is noted and intraosseous access is contraindicated or undesirable

Procedure:

1. Place the patient in a supine head down position where possible to distend the neck veins.
2. Turn the patient's head toward the opposite side if no risk of cervical injury exists.
3. Prep the site as per peripheral IV site.
4. Align the catheter with the vein and aim toward the same side shoulder.
5. "Tourniqueting" the vein lightly with one finger above the clavicle, puncture the vein midway between the angle of the jaw and the clavicle and cannulate the vein in the usual method.
6. Attach the IV and secure the catheter avoiding circumferential dressing or taping.
7. Avoid using cervical collars with external jugular venous access. If needed, other methods of cervical motion restriction should be used.
8. Document the procedure, time, and result (success) on/with the Patient Care Report (PCR).

Extremity IV
Intravenous Fluid Therapy

I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Any patient where intravenous access is indicated (significant trauma or mechanism, emergent or potentially emergent medical condition)
- Patients requiring intravenous fluids or medications
- Patients in which a potential for hemodynamic compromise or vascular system instability exists

Contraindications:

- None

Procedure:

Saline locks may be used as an alternative to an IV tubing and IV fluid in every protocol at the discretion of the provider.

EMT-I and Paramedics can use intraosseous access where threat to life exists as provided for in the Venous Access- Intraosseous Procedure CP-38.

1. Locate suitable venipuncture site and place a venous constricting band above the chosen site.
2. Select a vein and an appropriate gauge catheter for the vein and the patient's condition. Suitable venipuncture sites include:
   - Back of the hand
   - Forearm
   - Antecubital fossa
   - Leg
   - Scalp vein (infants only)
3. Inspect the IV solution for expiration date, cloudiness, discoloration, leaks, or the presence of particles.
4. Connect the IV tubing to the solution in a sterile manner. Fill the drip chamber half full and then flush the tubing bleeding all air bubbles from the line.
5. Prep the skin with Chlorohexadine.
6. Insert the needle with the bevel up into the skin in a steady, deliberate motion until a "pop" is felt and a blood flashback is visualized in the catheter.
7. Advance the catheter into the vein. **Never** reinsert the needle through the catheter. Dispose of the needle into the proper container without recapping.
8. Remove the venous constricting band and connect the IV tubing or saline lock.
9. Open the IV to assure patent access and free flow of the fluid and then adjust to a keep vein open (KVO) rate or as clinically indicated.
10. Cover the site with a sterile dressing and secure IV line.
11. Label the IV with date, time, catheter gauge, and name/ID of the person starting the IV.
12. Document the procedure, time and result on the patient care report (PCR).

Saline Lock:

1. Prepare equipment.
2. Flush air from "saline lock" with 1 to 3 mL of fluid.
3. Follow steps 1 through 8 as above for venipuncture.
4. Remove protective cap on the Luer lock device and carefully twist it onto the IV hub. Confirm that firm contact has been established and no fluid leaks exist.
5. Flush saline lock with 3 mL of normal saline looking for infiltration.
6. Tape or secure as previously noted.

Eye Irrigation BLS Only

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Irrigation of eye after chemical exposure/burn
- Assist with removal of foreign material from eye

Contraindications:

- Impaled object in eye
- Trauma to globe of eye

Notes/Precautions:

- None

Procedure:

1. Remove contact lenses (if present).
2. Initiate irrigation and direct the tip of the IV tubing at the medial canthus (corner of the eye nearest the nose) and allow to flow laterally. Do not allow irrigation fluid to come in contact with unaffected eye.
3. Continue irrigation throughout transport. All patients should receive transport to the ED to evaluate for corneal injury.

Eye Irrigation Morgan Lens

SO | Spcl. Ops. | SO

Clinical Indications:

- Irrigation of eye after chemical exposure/burn
- Assist with removal of foreign material from eye
- Morgan Lens for ≥ 8 years of age ONLY

Contraindications:

- Impaled object in eye
- Trauma to globe of eye

Notes/Precautions:

- Care should be taken that the patient does not rub eyes after administration of Proparacaine as damage can occur

Procedure:

1. Instill topical ophthalmic anesthetic in affected eye(s) per protocol if available.
2. Mix 100 mg Lidocaine (5 mL of a 2% solution) in 1 L normal saline.
3. If Morgan Lens available:
   - Attach Morgan Lens to delivery set equipped with a macro drip and start flow
   - Instruct the patient to look down and insert the upper portion of the lens under the upper lid
   - Instruct the patient to look up and retract the lower lid allowing placement of the lower portion of the Morgan Lens under the lower lid
   - Continue irrigation of the affected eye(s) using caution to ensure run off does not enter the unaffected eye. Do not allow the irrigation solution to run dry
   - Tape the tubing to the patients face to avoid inadvertent removal. Consider additional pain management as needed
4. To remove the Morgan Lens continue the flow of irrigation solution while instructing the patient to look up. Retract the lower lid and slide Morgan Lens from under the upper lid.
5. If no Morgan Lens available initiate irrigation and direct the tip of the IV tubing at the medial canthus (corner of the eye nearest the nose) and allow to flow laterally. Do not allow irrigation fluid to come in contact with unaffected eye.
6. Continue irrigation throughout transport. All patients should receive transport to the ED to evaluate for corneal injury.

Flex Guide ETT Introducer (Gum-elastic Bougie)

P EMT-P P

Clinical Indications:

- Any patient who meets clinical indication for orotracheal intubation
- **Must be used for each intubation attempt**.
- Predicted difficult intubation
- Digital intubation

Contraindications:

- None

Notes/Precautions:

- Soft tissue damage or bronchial rupture may occur:
  - During blind intubation
  - Positioning past the carina
  - If undue pressure is applied
  - If ET tube is passed over introducer without the use of a laryngoscope
- This is a single-use device. Do not attempt to clean or sterilize
- For optimal use, store flat in the same shape as packaged. Do not fold or roll up to save space

Procedure:

1. Prepare and perform an optimal direct laryngoscopy in accordance with the orotracheal intubation procedure.
2. Begin insertion of introducer.
   - Tactile confirmation of tracheal clicking will be felt as the distal tip of the introducer bumps against the tracheal rings
   - If tracheal clicking cannot be felt, continue to gently advance the introducer until "hold up" is felt
   - Tracheal "clicking" and "hold up" are positive signs that the introducer has entered the trachea
3. Lack of tracheal clicking or hold-up is indicative of esophageal placement.
4. While holding the introducer securely, and without removing laryngoscope, advance endotracheal tube over the proximal tip of the introducer.
5. As the tip of the endotracheal tube passes beyond the teeth, rotate the tube 90 degrees counter clockwise (1/4 turn to the left) so tube bevel does not catch on the arytenoid cartilage.
6. Advance endotracheal tube to the proper depth.
7. Holding endotracheal tube securely, remove introducer.
8. Verify correct placement of ET tube in accordance with the orotracheal intubation procedure.

Gastric Tube Insertion

I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Adult and pediatric cardiac arrest following placement of advanced airway
- When requested by On-Line Medical Control

Contraindications:

- Actual or suspected laceration or perforation of the esophagus
- Suspected fractures of the cribiform plate as evidenced by severe maxillofacial trauma (Nasal gastric tube placement only)
- Ingestion of a caustic substance
- Anticoagulant use (e.g., coumadin, warfarin) or disorders of coagulopathy (hemophilia) is a relative contraindication

Procedure:

1. Select appropriate sized tube according to patient size and measure the correct length for insertion.
   - To measure length: While holding the distal end of the tube, measure the distance from the patient's earlobe to the bridge of his/her nose, and from there to a point just below the xiphoid process
   - Mark this length with a piece of tape to serve as a future guide point
2. Have patient sit upright and lean slightly forward with his/her neck slightly flexed unless otherwise contraindicated.
3. In the unconscious or arrested patient with an advanced airway in place, the orogastric route of insertion may be preferred.
4. If an iGel is used the appropriate size gastric tube must be inserted through the gastric lumen of the iGel airway.
5. Lubricate distal 3 to 6 inches of the tube (preferably with Lidocaine jelly) and select the most widely patent nostril.
6. Support the back of the patient's head and gently advance tube straight back along the floor of the nasal cavity (in an anterior-to-posterior direction, not cephalad). If resistance is felt, rotate tube slightly to help advance it into position.
7. As tube reaches the posterior nasopharynx the patient is likely to gag. At this point, if the patient is able to do so, and it is not contraindicated, have the patient swallow a small amount of water.
8. Continue to insert the tube past the glottic opening into the esophagus. Continue to insert the tube into the nose until the pre-measured mark reaches the front edge of the nostril.
9. After reaching the predetermined mark confirm that the tube has not curled up into the oropharynx or pharynx. While listening over the epigastrium, inject 20-30 mL of air into the tube and listen for "gurgling" to indicate proper placement. Aspirate and observe for gastric contents (may not always be present).
10. If no sounds are heard over the epigastrium, and you notice fogging or misting in the tube, or patient cannot cough or speak, immediately withdraw the tube and oxygenate the patient.
11. If tube placement has been confirmed, securely tape the proximal end where it enters the nostril to the bridge of the nose.
12. After tube is firmly secured, connect the proximal end to suction device and suction as needed.

Hemostatic Agent

SO Spcl. Ops. SO

Clinical Indications:

- Serious hemorrhage that can not be controlled by other means

Contraindications:

- Wounds involving open thoracic or abdominal cavities

Procedure:

1. Apply approved non-heat-generating hemostatic agent per manufacturer's instructions.
2. Supplement with direct pressure and standard hemorrhage control techniques.
3. Apply dressing.

Intramuscular Injections

I Q	Immunize Qualified	I Q
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- When the rate of absorption needs to be slower and/or prolonged in action
- When other administration routes are unsuccessful or unavailable.
- Route indicated by protocol

Contraindications: None

Notes/Precautions:

- Appropriate equipment
- Needles size and length
  - 1/2 to 1 inch for deltoid, 1 to1.5 inch for larger muscles
  - 25 gauge for aqueous medications, 21 gauge for oily or thicker medications
- Appropriate size mL syringe for medication dose
- Chlorohexadine wipe and Band-aids
- Appropriate injection sites
  - Posterior deltoid for injections of up to 2 mL in adults contingent upon muscle mass development
  - Vastus Lateralis for injections of 2 mL or less in children and adults
  - Ventrogluteal site for injections of 2 to 5 mL in adults or 2 mL or less in children

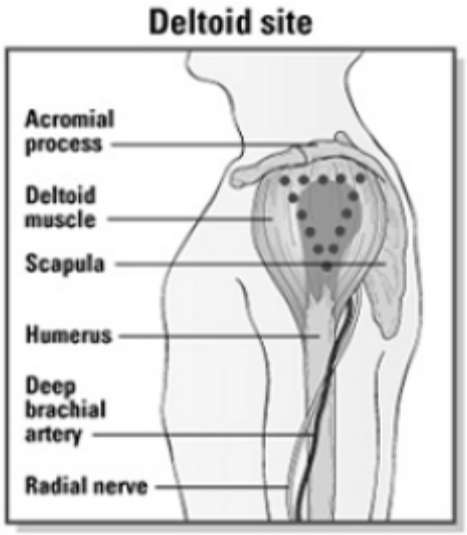
Procedure:

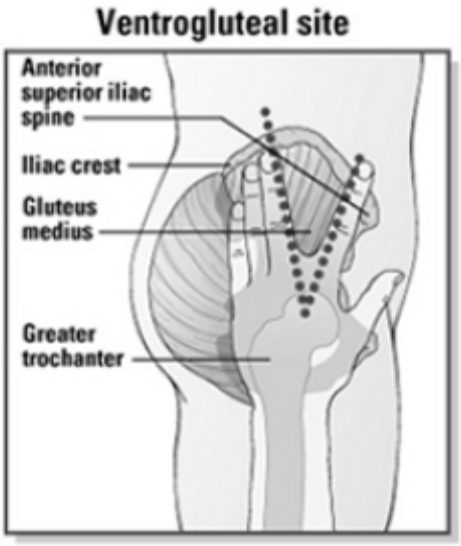
1. Prepare equipment.
2. Check label, date, and appearance of medication.
3. Five "R's" : Right patient / Right drug / Right dose / Right route / Right time.
4. Locate appropriate injection site.
5. Deltoid:
   - Identify the bony portion of the shoulder where the clavicle and scapula meet [the acromioclavicular joint (AC)]
   - Measure 3 to 4 fingers-width down the arm from AC joint
   - Slide one to two fingers-width posteriorly on the arm
6. Vastus lateralis sites:
   - Located on the anterior and lateral aspects of the thigh
   - Divide the area into thirds between the greater trochanter of the femur and the lateral femoral condyle
   - Injection is given into the middle third
7. Ventrogluteal site:
   - Place heel of palm on patient's greater trochanter of the femur
   - Place index finger on the anterior superior iliac spine and spread other fingers posteriorly
   - Injection is given in the V formed between the index finger and the second finger

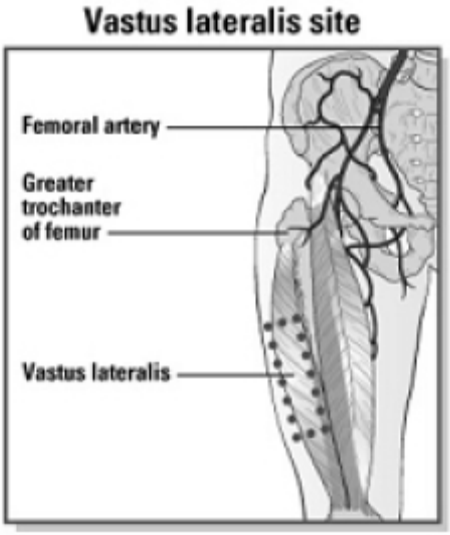
---A diagram of approved injection sites can be found on the following page---

8. **Do Medication Administration Cross Check**
9. Using a circular motion from selected site outward, cleanse site with Chlorohexadine.
10. With one hand, stretch or flatten the skin overlying the selected site. This will allow for smoother entry of the needle.
11. In the other hand, hold syringe like a dart and quickly thrust the needle into the tissue and muscle at a 90-degree angle.
12. Slowly inject medication.
13. After all medication is injected, quickly withdraw syringe and dispose of in an approved container.
14. Gently massage over the injection site to increase absorption and medication distribution.
15. Apply firm pressure and place band-aid over site.

Injection Sites







Impedance Threshold Device
Res-Q-Pod

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Patients > 1 year of age in Cardiopulmonary Arrest

Contraindications:

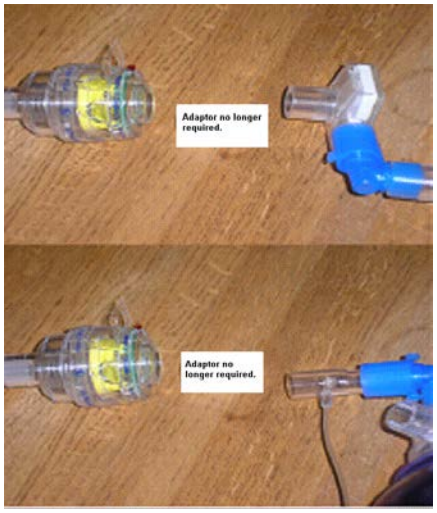
- Breathing patients and/or with a pulse

Procedure (IF BLS Airway):

1. Place ITD between face mask and BVM.
2. Maintain a continuous seal on face mask via 2nd provider.
3. Turn on timing assist lights and ventilate only when light flashes.
4. Use of the ITD should not interfere with continuous compressions.

Procedure (IF Advanced Airway):

1. Confirm tube placement; secure with commercial tube restraint.
2. Connect ITD directly to ET tube or BIAD.
3. Connect $ETCO_2$ device (capnometry or capnography) to adaptor.
4. Connect ventilation source directly to $ETCO_2$ device.
5. Turn on timing assist lights and ventilate only when light flashes.
6. Use of the ITD should not interfere with continuous compressions.



Insulin Pump

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications

- Patient that is hypoglycemic with altered mentation and an insulin pump in place

Contraindications

- None

Notes/Precautions:

- Care is directed at treating hypoglycemia first, then stopping administration of insulin

Procedure

1. Refer to appropriate PPE procedure.
2. Turn off insulin pump, if possible.
3. If no one familiar with the device is available to assist, disconnect pump from patient by:
   - Using quick-release where tubing enters dressing on patient's skin **-or-**
   - Completely removing the dressing, thereby removing the subcutaneous needle and catheter from under patient's skin
4. Transport patient to hospital.
5. If patient is refusing transport against medical advice (AMA):
   - Encourage the patient to eat,
   - Ensure the patient is with a competent person to observe the patient and assure they eat,
   - Instruct them to follow-up with their physician
   - Instruct them to call back if symptoms return.

Cyanokit

Clinical Indication:
Cyanokit is indicated for the treatment of known or suspected cyanide poisoning. Cyanide poisoning may result from inhalation, ingestion, or dermal exposure to various cyanide-containing compounds, including smoke from closed-space fires. Sources of cyanide poisoning include hydrogen cyanide and its salts, cyanogenic plants, aliphatic nitriles, and prolonged exposure to sodium nitroprusside. The presence and extent of cyanide poisoning are often initially unknown. There is no widely available, rapid, confirmatory cyanide blood test. Treatment decisions must be made on the basis of clinical history and signs and symptoms of cyanide intoxication. If clinical suspicion of cyanide poisoning is high, Cyanokit should be administered without delay.

Contraindications: None

Warnings and Precautions:

A. **Emergency Patient Management:** In addition to Cyanokit, treatment of cyanide poisoning must include immediate attention to airway patency, adequacy of oxygenation and hydration, cardiovascular support, and management of any seizure activity. Consideration should be given to decontamination measures based on the route of exposure.
B. **Allergic Reactions:** Use caution in the management of patients with known anaphylactic reactions to hydroxocobalamin or cyanocobalamin. Consideration should be given to use of alternative therapies, if available. Allergic reactions may include: anaphylaxis, chest tightness, edema, urticaria, pruritus, dyspnea, and rash. Allergic reactions including angioneurotic edema have also been reported.
C. **Blood Pressure Increase:** Many patients with cyanide poisoning will be hypotensive; however, elevations in blood pressure have also been observed in known or suspected cyanide poisoning victims. These elevations were generally transient and returned to baseline levels within 4 hours of dosing.

Preparation of Solution for Infusion:

1. The 5 g vial of hydroxocobalamin for injection is to be reconstituted with 200 mL of 0.9% Sodium Chloride injection (0.9% NaCl) using the supplied sterile transfer spike. The line on the vial label represents 200 mL volume of diluent.
2. Following the addition of diluent to the lyophilized powder, **the vial should be repeatedly inverted or rocked, "not shaken", for at least 60 seconds prior to infusion.**
3. Hydroxocobalamin solutions should be visually inspected for particulate matter and color prior to administration. If the reconstituted solution is not dark red or if particulate matter is seen after the solution has been appropriately mixed, the solution should be discarded.

Incompatibility Information:
Physical incompatibility (particle formation) and chemical incompatibility were observed with the mixture of hydroxocobalamin in solution with selected drugs that are frequently used in resuscitation efforts. Hydroxocobalamin is also chemically incompatible with sodium thiosulfate and sodium nitrite and has been reported to be incompatible with ascorbic acid. Therefore, these and other drugs should not be administered simultaneously through the same intravenous line as hydroxocobalamin.

Intraosseous Infusion
EZ - IO

I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- As the initial means of circulatory access in cardiac arrest **(ILS)**
- Patient where rapid vascular access is unavailable by other means in the following conditions: **(Paramedic Only)**
  - Multisystem trauma with severe hypovolemia
  - Severe dehydration with vascular collapse and/or loss of consciousness
  - Respiratory failure or respiratory arrest
  - After 3 unsuccessful attempts & patient is unstable

Contraindications:

- Fracture proximal to proposed intraosseous site
- History of Osteogenesis Imperfecta
- Current or recent infection at proposed Intraosseous site
- Previous Intraosseous insertion within 24 hours or joint replacement at or above the selected site

Procedure:

1. Prepare EZ-IO assuring that complete needle set with trochar and needle is present.
   - Examine needle set to insure that seal is intact and needle is sterile, unused
2. Landmark for insertion as follows:
   - Humeral head: Place the patient palm on the umbilicus with the elbow on the ground or stretcher. Use your thumb to identify the humeral shaft. Slide thumb towards humeral head with firm pressure. Locate the tubercle by the prominent bulge. Use the opposite hand to pinch anterior and posterior humerus to assure midline position on the humerous
   - Proximal Tibia: Identify anteromedial aspect of the proximal tibia palpated just below the inferior border of the patella. Insertion site is 1-2 cm (2 finger breadths) below this on the flat surface of the tibia
   - Distal Tibia: (reserved for > 12 years of age) Identify the anteriormedial aspect of the distal tibia (2 cm proximal to the medial malleolus)
3. Prep the selected insertion site with Chlorohexadine.
4. Hold the Intraosseous needle at 60-90 degree angle aimed away from the nearest joint. Power the driver until a “pop” or “give” is felt indicating a loss of resistance. Do not advance the needle further.
5. Remove the stylette and place in approved sharps container.
6. Attach a syringe filled with at least 5 mL of NS and aspirate to confirm placement. Inject 5 mL of NS to clear the needle while observing for infiltration.
7. Attach IV tubing and adjust flow rate as desired. A pressure bag may be used to enhance flow where appropriate.
8. Stabilize and secure the needle.
9. If the patient experiences pain with infusion or medication administration lidocaine may be instilled in the IO catheter line. Discontinue fluid/medication administration prior to administering lidocaine and wait 15 seconds prior to restarting. Lidocaine dosing as follows may be repeated once if pain persists:
   - Adult: 40 mg (2 mL of 2% solution)
10. When administering medications via the IO route delivery should be followed with a 10mL flush of NS.
11. Document the procedure, time and result on the patient care report and apply wrist band as appropriate if time allows.

Kendrick Traction Device

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Open or closed mid-shaft femur fracture

Contraindications:

- Injuries immediately proximal, or involving the knee joint
- Injury to the pelvis
- Partial amputation
- Lower leg or ankle injuries
- If use would delay transport of a patient with a life-threatening condition

Notes/Precautions:

- Isolated proximal femur fractures in the elderly are usually best managed with anatomical splinting utilizing a scoop stretcher. Traction splints are not appropriate for proximal femur fractures

Procedure:

1. Patient should be supine.
2. Check distal circulation, sensation, and motion.
3. Apply the ankle hitch tightly, slightly above the ankle bone.
4. Tighten stirrup by pulling the GREEN tabbed strap until the hitch fits snugly under the heel.
5. Apply upper thigh system by sliding male buckle under the leg at the patella, and using a “see-saw” motion, slide the strap upward until positioned in the groin.
6. Engage the buckle and cinch the strap until the traction pole receptacle is positioned at the belt-line or pelvic crest. Assure that genitalia is clear of strap.
7. Snap out traction pole making sure that each joint of the pole is securely seated.
8. Place traction pole alongside the leg so that one section (8”) extends beyond the bottom of the foot.
9. Adjust pole length as required (i.e., pediatric vs. adult). Insert pole end, or ends, into the traction pole receptacle.
10. Secure elastic strap around knee.
11. Place YELLOW tab over pointed (dart) end of traction pole and apply traction by pulling RED tab.
12. Patient comfort will be the primary objective. Traction should be applied smoothly by grasping the strap on each side of the buckle and simultaneously feeding and pulling with equal pressure.
13. Finish packaging by applying upper (thigh) and lower (ankle) elastic straps.
14. Reassess distal circulation, sensation, and motion.
15. Secure to long spine board, scoop, etc.

i-gel O_2 Airway (BIAD)

B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Cardiac arrest after assuring continuous compressions, defibrillation and BLS airway management has been completed
- Non-cardiac arrest patient without a gag reflex. **(PARAMEDIC and Intermediate ONLY)**
- Intubation is difficult/impossible due to patient access or airway anatomy **(PARAMEDIC ONLY)**

Contraindications:

- Patients who are conscious or who have an intact gag reflex
- Patients under/over weight for airway size used
- Patients with known esophageal disease (varices, alcoholism, cirrhosis etc.) or ingestion of caustic substances
- Deforming facial trauma that prevents proper seating of the airway

Size Selection:

Select the appropriate size i-gel o2 by assessing the patient's anatomy/weight.

	Weight	Size
i-gel O_2 Resus Pack Yellow	30-60 kg (66-132 lbs)	size 3.0
i-gel O_2 Resus Pack Green	50-90 kg (110-198 lbs)	size 4.0
i-gel O_2 Resus Pack Orange	90+ kg (198 lbs and up)	size 5.0

Pre-use checks:

1. Inspect the packaging and ensure it is not damaged prior to opening.
2. Inspect the device carefully, check that the airway is patent and confirm there are no foreign bodies or a bolus of lubricant obstructing the distal opening of the airway or gastric channel.
3. Carefully inspect inside the bowl of the device ensuring surfaces are smooth and intact and also that the gastric channel is patent
4. Discard the device if the airway tube or the body of the device looks abnormal or deformed.

Pre-insertion preparation:

1. Always wear gloves.
2. Open the i-gel O2 package, and on a flat surface remove the inner tray containing the airway support strap and sachet of lubricant and place to one side (Figure 1).
3. In the final minute of pre-oxygenation, remove the i-gel o2 open the sachet of supplied lubricant and place a small bolus of the lubricant on the base of the inner side of the main shell of the packaging (Figure 2).

4. Grasp the i-gel O2 along the integral bite block and lubricate the back sides and front of the cuff with a thin layer of lubricant. This process may be repeated if lubrication is not adequate, but after lubrication has been completed. Check that no BOLUS of lubricant remains in the bowl of the cuff or elsewhere on the device. Avoid touching the cuff of the device with your hands. (Figures 3, 4, and 5).
5. Ensure the supplementary oxygen port is firmly dosed with the integral cap until it is required for use.
6. Place the i-gel back into the main shell of the packaging in preparation for insertion. (Figure 6).

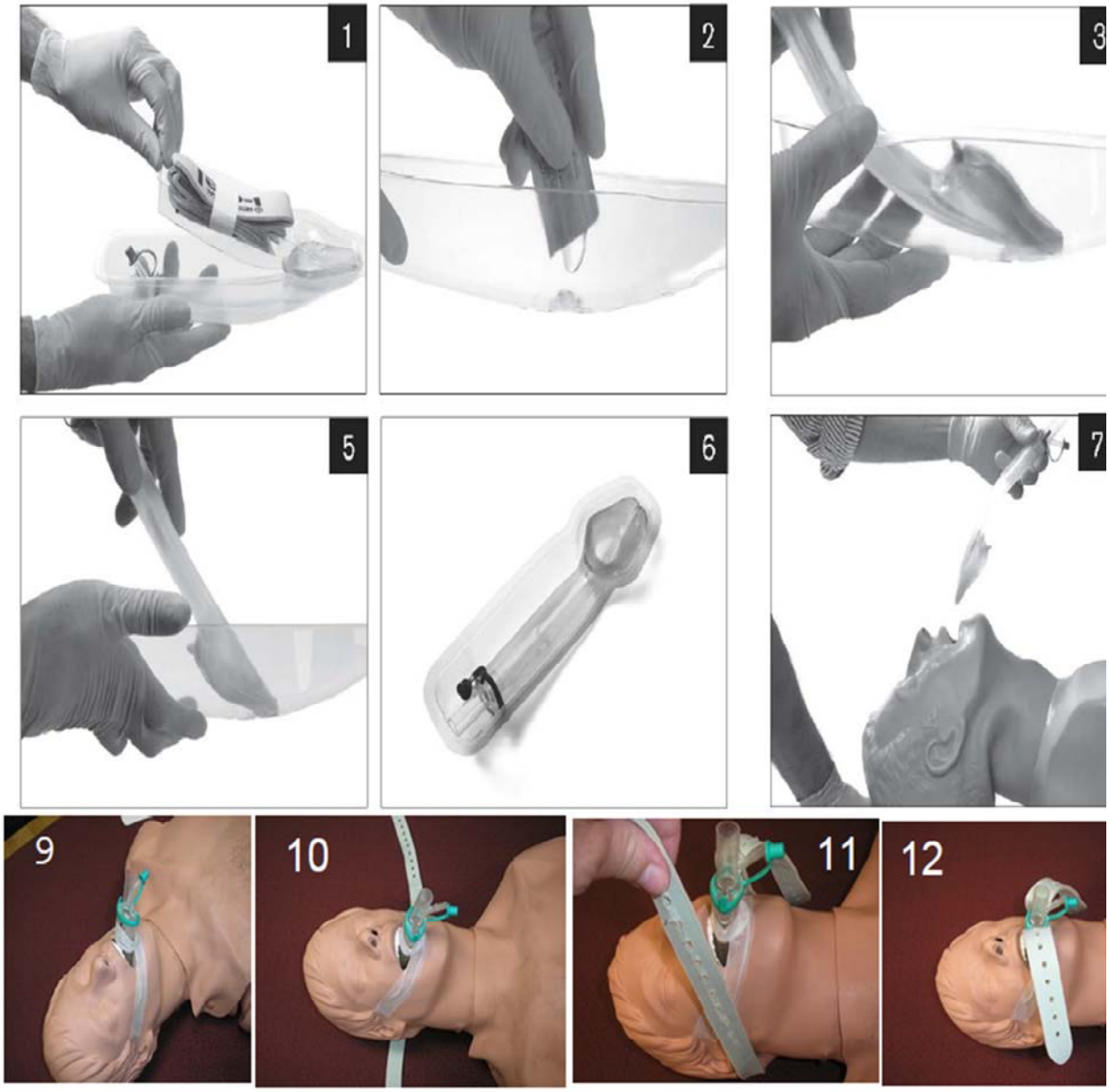
Recommended insertion technique:

WARNING: REMOVE DENTURES OR REMOVABLE PLATES FROM THE MOUTH BEFORE ATTEMPTING INSERTION OF THE DEVICE. DO NOT APPLY EXCESIVE FORCE DURING INSERTION.

IT IS NOT NECESSARY TO INSERT FINGERS OR THUMBS INTO THE PATIENT'S MOUTH DURING THE PROCESS OF INSERTING THE DEVICE.

1. Grasp the lubricated i-gel O2 firmly along the integral bite block. Position the device so that the i-gel O2 cuff outlet is facing towards the chin of the patient (Figure 7).
2. The patient should be in the 'sniffing the morning air' position (Figure 7) with head extended and neck flexed. The chin should be gently pressed down by an assistant before proceeding to insert the i-gel O_2.
3. Introduce the leading soft tip into the mouth of the patient in a direction towards the hard palate.
4. Glide the device downwards and backwards along the hard palate with a continuous but gentle push until a definitive resistance is felt.
5. At this point the tip of the airway should be located into the upper esophageal opening (Figure 8a) and the cuff should be located against the laryngeal framework (Figure 8b). The incisors should be resting on the integral bite-block (Figure 8c)
6. i-gel O2 should be taped down from maxilla to maxilla **AND** secured with the airway support strap provided (Figures 9,10,11 and 12).
7. If an ITD is to be used it must be placed at this time, connected directly to the airway.
8. Apply CO2 detection device (or capnography if available).
9. Confirm proper position by auscultation, chest movement and verification of CO2 by capnography/ capnometry after 6 breaths.
10. Once proper position in confirmed by auscultation and/or chest rise; the provider must continue to stabilize the i-gel with their free hand. (Figure 13).
11. Providers may continue to use backboards to assist in patient movement as needed.

i-gel O_2 Airway (BIAD)



LUCAS

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Adult patient in cardiac arrest

Contraindications:

- Device does not fit patients
- Patient <18 years of age
- Traumatic Cardiac Arrest
- Obviously Pregnant

Notes/Precautions:

- Minimize interruptions in chest compressions to place device.
- Must be appropriately trained
- Use an Anterior-Posterior pad placement.

Procedure:

1. Remove from bag.
2. Ensure that operation knob is in the ADJUST position.
3. Assemble/Prepare device, in accordance with the type being used (electric or pneumatic)
4. Pause chest compressions at 2 minute pause (Pit-crew model).
5. Apply Posterior AED pad and Place patient on backboard.
6. Place back plate under patient on backboard below armpits.
7. Resume chest compressions.
8. Attach LUCAS device to back plate.
9. Position suction cup.
   - Lower edge immediately above end of sternum
   - Pressure pad centered over middle of sternum
   - Lower suction cup & pressure pad to the point where it just comes into contact with the patient's chest
10. If pad does not fit, return to manual chest compressions.
11. Turn operation knob to ACTIVE.
12. Check device for proper position.
13. Attach stabilization straps.
14. LUCAS device should never be left unattended or with an untrained provider.
15. To stop LUCAS, turn operation knob to LOCK.
    Should only be done:
    - if device improperly placed
    - damage to the patient is occurring
    - to assess the patient
    - while AED is analyzing and charging
16. Once patient has a sustained ROSC, release and retract the "pressure pad" to allow for greater chest excursion and tidal volume during BVM usage.

Manual Defibrillation

P EMT-P P

Clinical Indications:

- Cardiac arrest with ventricular fibrillation or pulseless ventricular tachycardia

Contraindications:

- None

Procedure:

1. Ensure that chest compressions are adequate and interrupted only at two minute pause (Pit-crew model).
2. Apply hands-free defibrillation pads on the patient's chest per the manufacturers' instructions.
3. Clinically confirm the patient's condition is consistent with the rhythm and the need for defibrillation exists. This is a SHOCK/NO SHOCK interpretation ONLY.
4. Select energy level to be delivered per protocol and charge defibrillator to the desired energy level. (this may be performed 15 seconds in advance of an anticipated break in CPR). Assure chest compressions continue while the device is charging.
5. Discontinue compressions, assertively state, "CLEAR" and visualize from the patient's head to toe to assure no one is touching the patient.
6. Deliver shock by depressing shock button.
7. Immediately resume chest compressions. After 2 minutes of continuous CPR, pause briefly (< 10 sec) to perform pulse check and analyze rhythm.
8. Repeat the procedure every two minutes as indicated by the patient's response and rhythm.

Nasal Drug Delivery Device

I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Patients requiring rapid medication administration in accordance with protocol and other route(s) of administration are not immediately available
- Medications currently System approved for this route:
  - Midazolam (Versed) see individual Protocol for application (Adult and Pedi)
  - Fentanyl (Sublimaze) for Pain management (Adult and Pedi)
  - Naloxone (Narcan) for opiate overdoses (Adult and Pedi)

Procedure:

1. Airborne PPE (N95 and eye protection) should be worn when administering medication via this route.
2. Dose appropriate medications should be drawn up into syringe.
3. Attach MAD 300 device to syringe.
4. Do Medication Administration Cross Check
5. Administer medications by aerosolizing medication in patient nostril (limit of 1.0 mL per nostril).
6. Due to fluid contamination dispose of in an approved sharps container.

Nasotracheal Intubation

P EMT-P P

Clinical Indications:

- A spontaneously breathing patient in need of intubation (inadequate respiratory effort, evidence of hypoxia or carbon dioxide retention, or need for airway protection)
- Rigidity or clenched teeth prohibiting other airway procedures

Contraindications:

- Non-breathing or near apneic patient
- Patient age less than 12 years
- Use with caution in
  - Acutely hypertensive patients
  - Patients suspected of experiencing elevated ICP
- Known or likely fracture/instability of mid-face secondary to trauma

Relative Contraindications:

- Blood clotting abnormalities
- Nasal polyps
- Upper neck hematomas or infections

Procedure:

1. Prepare, position and oxygenate the patient with 100% oxygen.
2. Choose proper ET tube about 1mm less than for oral intubation.
3. Two sprays of Neo-Synephrine (phenylephrine) should be applied to the appropriate nostril. If needed Hurricane topical anesthetic, ½ second spray may be instilled in the posterior pharynx and repeated x 1.
4. Lubricate ET tube generously with water-soluble lubricant such as Lidocaine Jelly.
5. Pass the tube in the largest nostril, perpendicular to the facial plate following the curvature of the airway.
6. Use forward, lateral back and forth rotating motion to advance the tube. **Never force the tube.**
7. Continue to advance the tube noting air movement through it; use the BAAM whistle to assist.
8. Apply firm cricoid pressure; advance the tube quickly past the vocal cords during inspiration.
9. Inflate the cuff with 5 to 10 cc of air.
10. Auscultate for absence of sounds over epigastrium and presence of equal bilateral breath sounds. If present unilaterally/unequal, adjust tube position and consider whether this may be patient's baseline. If unsure of placement, remove tube and ventilate with bag-valve mask.
11. Apply end tidal carbon dioxide monitor. After 3 ventilations, $ETCO_2$ must be >10. If less than 10 check for adequate circulation and check equipment. Remove the ET tube if pCO_2 remains <10 in the absence of a physiologic explanation. Record initial, ongoing, and final $ETCO_2$ values on the PCR/ePCR.
12. If $ETCO_2$ equipment failure occurs, use other means for confirmation.
13. Secure the tube to the patient's face.
14. Reassess airway, breath sounds, and $ETCO_2$ after transfer to the stretcher and during transport. These tubes are easily dislodged and require close monitoring and frequent reassessment.
15. Providers may continue to use backboards to assist in patient movement as needed.
16. Complete the airway verification form on arrival at destination.

Nebulized Medication

B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Patients requiring medication administration via nebulized route in accordance with the appropriate protocol

Contraindications:

- Hypersensitivity to medication
- Medications not approved for nebulized delivery

Procedure:

1. Ensure all required pieces are available.
   - T-piece
   - 6” tubes X 1
   - Mouthpiece and/or face mask
   - Medication chamber
   - Oxygen tubing
2. Assemble nebulizer.
3. Attach larger female port of T-piece firmly to male adapter on medication chamber.
4. If face mask is being used, the female fitting on the bottom of the mask is connected directly to the male adapter on the medication chamber.
5. Attach 6” tube to the male ports on the T-piece.
6. Firmly attach threaded portion of mouthpiece to 6” tube.
7. If patient is NOT intubated insure the nebulizer chamber is upright to insure proper aerosol dispersal
8. If patient is intubated, attach 90-degree endotracheal tube adapter to endotracheal tube and other end to the 6” tube.
9. Attach oxygen supply tubing to oxygen port located on bottom of medication chamber.
10. Do Medication Administration Cross Check
11. Unscrew top of medication chamber, add total amount of medication to be nebulized, and replace top.
12. Set oxygen flow rate based on equipment specifications.
13. Ensure that medication is flowing prior to giving mouthpiece to patient or placing face mask on patient.
14. Place mouthpiece in patient’s mouth or position face mask on patient, instructing him/her to inhale as deeply as possible and hold as long as possible prior to exhaling.
15. If patient is intubated.
    - Attach non-rebreathing patient valve of bag-valve-mask to free 6” tube
    - Ensure suctioning port on 90-degree adapter is closed
    - Begin ventilating patient
16. Nebulized medications may be used with CPAP device. Refer to CPAP device instructions for appropriate assembly and administration.
17. Treatment should be provided until medication is depleted.
18. Monitor patient for medication effects including reassessment of vital signs and breath sounds.
19. Document the medication administration including dose and time as well as any observed patient response in the patient care record.

Needle Cricothyrotomy

P EMT-P P

Indications:

- Patients <10 years of age
- With obstructed airway or in whom all conventional methods of oxygenation have failed

Contraindications:

- Anytime a less invasive maneuver would allow oxygenation of the patient
- Tracheal transection

Notes/Precautions:

- Cricothyroid membrane is located by:
  - Palpating the protuberant midline portion of the thyroid cartilage ("Adams apple")
  - Move the fingertip inferiorly until it rests in the soft, flat depression between the thyroid cartilage and the cricoid cartilage
- In order to minimize the risk of dislodgement:
  - The individual completing the procedure should direct any/all patient movement
  - BVM is to be disconnected from the ET tube adapter any patient movement
  - The catheter is to be reassessed following any patient movement
- Appropriate size angiocath is generally 14-18 gauge, depending on size of the child

Procedure:

1. Position patient supine with head slightly extended unless contraindicated due to suspected cervical spine injury.
2. Prepare anterior surface of the neck with Chlorohexadine.
3. Locate the cricothyroid membrane.
4. Place thumb and index finger of non-dominant hand on either side of the tracheal cartilage to stabilize the trachea and anchor and stretch the skin slightly.
5. Connect appropriate sized angiocath to a 12 cc syringe.
6. Pierce the skin and cricothyroid membrane at a 45-degree angle, directing the catheter tip inferiorly while pulling suction on the syringe until air is aspirated freely.
7. Advance the catheter to the skin and withdraw needle.
8. Connect catheter to 3.0 mm pediatric ET tube adapter.
9. With a BVM attached to 100% oxygen begin ventilating and confirm proper placement.
10. With hub of catheter snug against the neck, tape catheter firmly in place.
    - Catheter and ET tube adapter are to be secured at all times by hand
    - Catheter should secured with tape and benzoin to prevent slipping
11. Providers may continue to use backboards to assist in patient movement as needed.

Orotracheal Intubation

P EMT-P P

Clinical Indications:

- Inability to adequately ventilate a patient with a Bag Valve Mask or prolonged EMS transport requires a more advanced airway
- An unconscious patient without a gag reflex who is apneic or is demonstrating inadequate respiratory effort
- Risk to benefit ratio of oral tracheal intubation to BIAD insertion favors oral tracheal intubation
- **Inability to adequately oxygenate/ventilate a patient after attempted BIAD insertion**
- Patient suspected having suffered inhalation injuries with impending airway compromise

Contraindications:

- None in the presence of the need for definitive airway management

Procedure:

1. Prepare, position and oxygenate the patient using appropriate BLS maneuvers and 100% oxygen.
2. Select proper ET tube size and have all equipment ready (including suction).
3. Using laryngoscope visualize vocal cords using cricoid pressure/BURP maneuver as needed.
4. Limit each intubation attempt to less than 30 seconds. Utilize BVM between attempts.
5. If unable to visualize the cords change patient position, or blade size/type.
6. **Begin insertion of a Flex Guide ETT Introducer (Bougie). <u>Must be used for each attempt.</u>**
   - Tactile confirmation of tracheal clicking will be felt as the distal tip of the introducer bumps against the tracheal rings
   - If tracheal clicking cannot be felt, continue to gently advance the introducer until “hold up” is felt
   - Tracheal “clicking” and “hold up” are positive signs that the introducer has entered the trachea
7. Lack of tracheal clicking or hold-up is indicative of esophageal placement.
8. While holding the introducer securely, and without removing laryngoscope, advance endotracheal tube over the proximal tip of the introducer.
9. As the tip of the endotracheal tube passes beyond the teeth, rotate the tube 90 degrees counter clockwise (1/4 turn to the left) so tube bevel does not catch on the arytenoid cartilage.
10. Advance endotracheal tube to the proper depth. While visualizing the ETT passing through vocal cords.
11. Holding endotracheal tube securely, remove introducer.
12. Inflate ETT cuff with 3-10 mL of air.
13. Auscultate for absence of breath sounds over epigastrum and presence of bilateral breath sounds. If unilateral or unequal breath sounds adjust tube position and/or consider causes for this finding. If unsure of placement at any time remove the ETT and resume ventilations with BVM.

14. Apply ETCO2 monitor. After 3 ventilations ETCO2 should be > 10 or comparable to pre-intubation values. If < 10 check for adequate circulation, equipment failure and ventilatory rate. If no cause can be found remove the ETT and resume BVM ventilation.
15. Record initial, ongoing and final ETCO2 values in the PCR/ePCR.
16. Secure the ETT using commercial device whenever possible.
17. Document ETT size, depth of insertion, time of successful intubation and number of attempts. Document confirmation of the ETT by presence of breath sounds, absence of sounds over the epigastrum, end tidal CO2 and/or capnography and any/all additional methods of confirmation. Reconfirm correct placement after each patient movement.
18. Consider gastric distention and place an NG/OG tube after airway is secured with ETT.
19. Providers may continue to use backboards to assist in patient movement as needed.
20. Document in PCR/ePCR confirmation indications of successful orotracheal intubation.

Orthostatic Blood Pressure Measurement

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Patient situations with suspected blood, fluid loss, or dehydration with no indication for spinal immobilization
- Patients ≥ 8 years of age, or patients larger than the PEDIA Tape

Procedure:

1. Gather and prepare standard sphygmomanometer and stethoscope.
2. With the patient supine, obtain pulse and blood pressure.
3. Have the patient sit upright.
4. After 30 seconds, obtain blood pressure and pulse.
5. If the systolic blood pressure falls more than 20 mmHg or pulse increases more than 20 beats per minute or the patient develops symptoms such as lightheadedness, weakness or presyncopal symptoms the patient is considered to be orthostatic.
6. If no symptoms or significant change in vital signs have the patient stand. Repeat steps #4 and #5 above.
7. If a patient is symptomatic while sitting, lying or is obviously dehydrated based on history or physical exam, formal orthostatic examination should be omitted and fluid resuscitation initiated.

Pelvic Binder (SAM Sling®)

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Potential unstable pelvic fracture

Contraindications:

- Provided the patient is of appropriate size for the size of SAM Sling® available, there are no contraindications for it's use in the presence of appropriate assessment findings

Notes/Precautions:

- Anytime application of the SAM Sling® is a consideration, application of the A/TCEMS Spinal Restriction Algorithm should be considered as well
- The SAM Sling® is a force-controlled device that won't allow the belt to be over tightened
- "Autostop" buckle has spring-loaded prongs that lock the buckle in place when the right amount of force is applied
- Except for two small metal springs in the buckle, the SAM Sling® is transparent to X-rays
- Once properly applied, the Sling should be removed only under the supervision of a physician
- If necessary to remove the Sling
  - Do not cut to remove
  - Release orange pull handle in order to remove

Procedure:

1. Unfold Sling with white surface facing up.
2. Place white side of Sling beneath patient at level of buttocks along a line drawn between greater trochanters and the symphysis pubis.
3. Firmly close Sling by placing black Velcro side of flap down on blue surface of Sling.
4. Fold back material as needed.
5. Try to place buckle close to midline.
6. Grab orange handle on outer surface of flap and release from flap by pulling upward.
7. With or without assistance pull both orange handles in opposite directions to tighten Sling.
8. Keep pulling until the buckle "clicks" and the free handle stops.
9. Maintain tension and firmly press orange handle against the blue surface of the Sling.

Restraints

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Any patient who may harm himself or others, may be gently restrained to prevent injury to the patient or crew. Physical or chemical restraint must be humane and used only as a last resort. Other means to prevent injury to the patient or crew must be attempted first. These efforts could include reality orientation, distraction techniques, or other less restrictive therapeutic means

Procedure:

1. Attempt less restrictive means of managing the patient.
2. Request law enforcement assistance.
3. Ensure that there are sufficient personnel available to physically restrain the patient safely.
4. Restrain the patient in a lateral or supine position. No devices such as backboards, splints, or other devices will be placed on top of the patient. The patient will never be restrained in the prone position.
5. The patient's upper extremities should be restrained with 1 arm at or above the level of the head and 1 arm at or below the waist level if possible; unless clinically inappropriate.
6. The restrained patient must be under constant observation by an ALS credentialed provider at all times. This includes direct visualization of the patient as well as cardiac and pulse oximetry monitoring.
7. The extremities that are restrained will have a circulation check at least every 15 minutes. The first of these checks should occur as soon after placement of the restraints as possible. This **MUST** be documented on the PCR.
8. Documentation on the patient care report (PCR) should include the reason for the use of restraints, the type of restraints used and the time restraints were placed. Use of the Restraint Checklist is highly recommended.
9. If the above actions are unsuccessful, or if the patient is resisting the restraints, chemical restraint should be utilized in accordance with the Behavioral Protocol. (Chemical restraint may be considered earlier.).
10. If a patient is restrained by law enforcement personnel with handcuffs or other devices EMS personnel can not remove, a law enforcement officer must accompany the patient to the hospital in the transporting EMS vehicle or be immediately available.

Pleural Decompression

P EMT-P P

Clinical Indications:

- Patients with suspected tension pneumothorax as evidenced by:
  - Hypotension (SBP<90), clinical signs of shock and at least one of the following:
    - Jugular vein distention
    - Absent or decreased breath sounds on the affected side
    - Hyper-resonance to percussion on the affected side
    - Increased resistance when ventilating a patient
    - Tracheal deviation away from the side of injury (a late sign)
- Patient in traumatic arrest with chest or abdominal trauma in whom resuscitation is indicated. These patients may require bilateral chest decompression even in the absence of the signs above

Contraindications:

- Bilateral decompression should not be performed without positive pressure ventilations

Procedure:

1. Administer high flow oxygen.
2. Prepare equipment and don appropriate PPE.
3. Identify and prep the site:
   - Locate the second intercostal space in the mid-clavicular line.
     ---or---
   - Lateral placement at the fourth intercostal space in the mid-axillary line.
4. Prepare the site with Chlorohexadine.
5. Insert the appropriate catheter perpendicular to the chest wall over the top of the inferior rib.
6. Advance the needle-catheter assembly through the parietal pleura until a “pop” is felt and air or blood exits the catheter. Advance only the catheter until the hub is in contact with the chest wall.
7. Remove the needle leaving the plastic catheter in place.
8. Secure the catheter hub to the chest wall.
9. Consider placing one-way valve or creating a flutter valve from the finger of an exam glove. This should not delay the pleural decompression procedure.

OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

Pain Assessment and Documentation

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Any patient

Definitions:

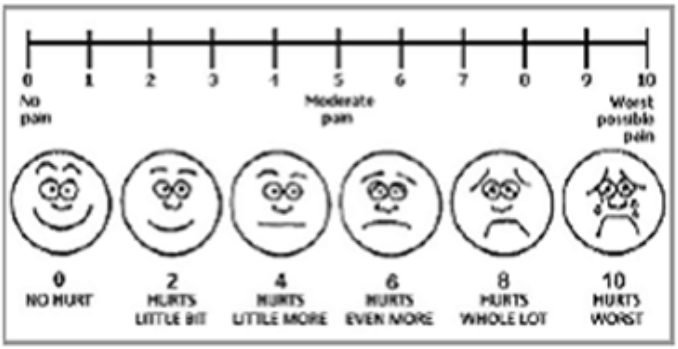
- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective (whatever the patient says it is)

Procedure:

1. Initial and ongoing assessment of pain intensity and character is accomplished through the patient's self report.
2. Pain should be assessed and **must** be documented in the PCR/ePCR during initial assessment, before starting pain control treatment, with each set of vitals after a pharmaceutical pain management intervention, and with vital signs until transfer of care.
3. Three pain scales are available: the 0 – 10 Scale, the Wong-Baker "faces", and the FLACC.

- **0 – 10 Scale**: the most familiar scale used by EMS for rating pain with patients. It is primarily for adults and is based on the patient being able to express their perception of the pain as related to numbers. Avoid coaching the patient; simply ask them to rate their pain on a scale from 0 to 10, where 0 is no pain at all and 10 is the worst pain ever.
- **Wong-Baker "FACES" Scale**: This scale is primarily for use with pediatrics but may also be used with geriatrics or any patient with a language barrier. The faces correspond to numeric values from 0-10. This scale can be documented with the numeric value.
- **FLACC Scale**: This scale has been validated for measuring pain in children with mild to severe cognitive impairment and in pre-verbal children (including infants).

Wong-Baker Faces



Face 0	Very happy. Doesn't hurt at all
Face 2	Hurts just a little bit.
Face 4	Hurts a little more
Face 6	Hurts even more
Face 8	Hurts a whole lot
Face 10	Hurts as much as you can imagine. Don't have to be crying to feel this bad

FLACC Scale

Categories	Scoring		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
Activity	Lying quietly, normal position moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
Cry	No cry, (awake or asleep)	Moans or whimpers; occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content and relaxed	Reassured by occasional touching hugging or being talked to, distractible	Difficulty to console comfort

SMART BAG®MO

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Patient in need of ventilatory support and/or in acute respiratory distress.

Contraindications: None

Preparation for use:

1. Inspect the **SMART BAG®MO** resuscitator to ensure that all components are present and properly assembled.
2. Test for leaks by occluding the patient port completely squeezing the bag (Any leaks in the system may prevent the delivery of sufficient volume to the patient).
3. Squeeze and release the **SMART BAG®MO** hard a few times to ensure that air is moving through the valve system to the mask. The **SMART®** Valve in the neck of the bag should move freely indicating increased airway pressure and you should notice an immediate increase in bag tension (stiffness).
4. Gently squeeze and release the **SMART BAG®MO** a few times to ensure that the bag tension is reduced and the **SMART®** Valve in the neck of the bag does not move forward when you gently squeeze. This provides confirmation that the airway pressure will be kept to the minimum required for adequate ventilation to occur while reducing the risk of gastric insufflation.
5. If using supplemental oxygen, attach the reservoir system to the bag refill port and ensure that the oxygen tubing is attached to an oxygen source with a flow rate of at least 15 lpm. Ensure that the collapsible reservoir system is fully extended to allow maximum oxygen storage.

Procedure:

1. Select the appropriate **SMART BAG®MO** resuscitator model for the size of patient to be ventilated.
2. Ensure that the patient's airway is clear of any obstructions and remains open by properly positioning the patient's head.
3. Maintain a proper mask-to-face seal with one hand by lifting the chin upward with the last three fingers of the hand. Keep the index finger and thumb on top of the mask to form a tight seal around the patient's mouth and nose. The 2 handed technique is preferred for maintaining mask-to-face seal during Pit Crew operations.
4. Gently squeeze the **SMART BAG®MO** with the other hand until the chest rises, then release. Ventilate the patient with a steady squeeze and release of the **SMART BAG®MO** allowing sufficient time between ventilations to allow for full emptying of the patient's lungs.
5. If the child **SMART BAG®MO** is being used and the Pressure Relief override is required to be applied, place a finger over the Pressure Relief Button, depress the button and rotate 90° to lock in place. To unlock simply rotate the button until the arrow lines up with the arrow on the patient valve and release.
6. If you are unable to effect a positive mask seal/good airway control, rotate the lock out mechanism to lock out the **SMART®** valve. (Adult or Pedi)
7. If you are ventilating a patient that is breathing, rotate the lock out mechanism to lock out the **SMART®** valve. (Adult or Pedi)
8. Safely dispose of the **SMART BAG®MO** after use.

Pressure Infusion Bag

I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Inadequate gravity flow of IV fluid

Contraindications:

- Controlled drip rates required for fluid or medication administration
- IV/IO where patency of line is in question

Procedure:

1. Purge the air from the IV bag.
2. Spike the bag as usual.
3. Invert the bag and squeeze to expel all of the air from the IV bag, drip chamber, and tubing.
4. Establish IO/IV and assure patency.
5. Place IV bag into the net pocket of the pressure infusion bag and inflate infusion bag until the desired amount of pressure has been applied.
6. Once patient has been delivered to receiving facility, deflate infusion bag and remove the IV fluid bag.
7. If the bag is grossly contaminated, dispose of it.
8. If the bag is not grossly contaminated, decontaminate it in the same fashion as a blood pressure cuff.

Pulse Oximetry

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- As an adjunct to patient assessment
- Any patient who receives a narcotic, sedative, or paralytic medication
- Before, during, and after advanced airway, CPAP or other airway intervention

Contraindications:

- None

Notes/Precautions:

Specific circumstances that may result in inaccurate pulse oximetry readings:

- States of decreased peripheral perfusion (hypotension, hypothermia)
- Carbon monoxide poisoning, methemoglobinemia, cyanide poisoning
- Excessive ambient light (sunlight, florescent lights) on the pulse oximeter probe

Procedure:

1. Apply probe to finger or other site as recommended by the device manufacturer.
2. Allow device to register initial saturation level and record the time and result on the patient care report. Initial readings should be on room air when possible and patient condition allows.
3. Correlate patient pulse with oximeter pulse and waveform.
4. Monitor critical patients continuously throughout pre-hospital care.
5. In general a “normal” pulse oximetry reading is 97-100%.
6. Remember to treat the patient not the pulse oximeter reading. The pulse oximeter reading should never be used to withhold oxygen from a patient in respiratory distress.

Respiratory Precautions

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

In cases where infectious agents transmitted by an airborne route are prevalent in the community or have reached pandemic status a provider pre-alert system may be implemented in the communications center. In these cases providers will be advised of the potential need for increased precautions at the time of dispatch.
In the absence of pre-arrival notification respiratory protection should be considered when confronted by any patient presenting with an acute febrile respiratory illness, which may include fever plus one or more of the following:

- nasal congestion/ rhinorrhea,
- sore throat
- or cough

Contraindications:

Not Applicable

Notes/Precautions:

- EMS providers should be aware of the signs and symptoms of infectious respiratory diseases and the procedures necessary for protecting themselves. Not all respiratory infections are transmitted in the same way. Transmission can occur from direct or indirect contact, large droplets, or small droplet nuclei. The mode of transmission will depend on the etiological agent. Providers must be familiar with PPE application (donning) and removal (doffing) procedures.
- Certain procedures can also impact transmission of infectious agents by producing aerosols. These are deemed "high risk respiratory procedures" and include intubation, extubation, deep tracheal suctioning, and nebulized respiratory treatments. Fitted N95 mask is recommended for any “high risk respiratory procedure” in the setting of suspected acute febrile respiratory illness.
- More often in the field of emergency medicine, the etiologic agents of infections are unknown.

Procedure:

Droplet Precautions:

Droplet precautions should be employed for patients with febrile respiratory illness as defined above. (Examples include influenza, meningitis and pertussis as well as common respiratory viruses such as adenovirus and rhinovirus).

1. Utilize the incident information provided by Communications that alerts providers to a possibly symptomatic patient (when applicable).
2. Provide surgical masks to all patients with symptoms of a respiratory illness who can tolerate its placement.
3. For patients who cannot wear a surgical mask in addition to any medical treatment being provided, consider application of oxygen via non-rebreather face mask to limit dissemination of airborne particles.
4. Providers should wear a surgical mask and adhere to the Standard Precautions Procedure - the use of gown, gloves and eye protection if contact with bodily secretions or a contaminated environment is anticipated.
5. High risk respiratory procedures which include intubation, extubation, deep tracheal suctioning, and nebulized respiratory treatments, require the highest level of respiratory

protection which is a fitted N95 respirator mask. Perform a "fit check" by molding the mask to the face and checking for air leaks after donning N95 respirators.

6. Continue to use droplet precautions to manage patients with respiratory symptoms until it is determined that the cause of symptoms is not an infectious agent that requires precautions beyond standard precautions.
7. Be attentive to minimizing the transfer of any potentially infectious materials acquired during patient contact to medical equipment, stretchers, and other ancillary tools so as to lessen the chances of cross contamination and infection.
8. Exercise caution in the removal of PPE to prevent inadvertent self-inoculation in the event the PPE has been contaminated with potentially infectious materials.
9. Initiate hand hygiene as soon as feasible after doffing your PPE.

Airborne Precautions (All Hazard):

Airborne precautions include Standard Precautions, Contact Precautions and the Droplet Precautions outlined above. Airborne precautions should be employed in cases where the infectious agent is spread via an airborne vector which forms small particles that may remain airborne for an extended period of time. (Examples include tuberculosis, measles, chicken pox, small pox and pandemic illness). In addition Airborne Precautions may be called for in the early phases of pandemic illness when the exact mechanism of transmission is unknown. Tuberculosis should be considered when the patient exhibits the following symptoms:

- A protracted cough lasting 3 weeks or longer
- Cough productive of bloody sputum
- Cough in conjunction with the following:
  - Fever/chills and
  - Night sweats and/or
  - Weight loss

1. Utilize the incident information provided by Communications that alerts providers to a possibly symptomatic patient requiring this level of protection.
2. Providers should limit the number of personnel who have initial contact with the patient by conducting the “View from the Door.”
3. Such a view can provide the necessary impression that will assist to determine the need for extensive medical intervention requiring multiple providers.
4. Should such an impression not be clearly evident, only 1 first responder, in the appropriate PPE (described above), should make patient contact and conduct the initial patient assessment.
5. Providers should don a fitted N95 mask for all patient contact and perform a "fit check" by molding the mask to the face and checking for air leaks after donning.
6. Provide surgical masks to all patients with symptoms of a respiratory illness who can tolerate its placement.
7. For patients who cannot wear a surgical mask in addition to any medical treatment being provided, consider application of oxygen via non-rebreather face mask to limit dissemination of airborne particles.
8. Continue to use airborne precautions to manage patients with respiratory symptoms until it is determined that the cause of symptoms is not an infectious agent that requires precautions beyond standard precautions.

Safe Injection Practices

Legend		
I Q	Immunize Qualified	I Q
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

To ensure adherence to basic principles of infection control and aseptic technique to prevent or diminish the risk of disease transmission during:

- Initiation of IV access
- Intramuscular/subcutaneous injections
- Drawing of medications
- Preparation and delivery of parenteral medications

Contraindications:

Not Applicable

Notes/Precautions:

- The primary breaches in infection control practice that contribute to potential disease transmission include, but not limited to: reinsertion of used needles into a multiple-dose vial or solution container (e.g., saline bag) and use of a single needle/syringe to administer intravenous medication to multiple patients
- Adherence to basic principles of aseptic technique includes the use of a sterile, single-use, disposable needle and syringe for each injection given and prevention of contamination of injection equipment and medication
- Whenever possible, use of single-dose vials is preferred over multiple-dose vials, especially when medications will be administered to multiple patients

Procedure:

1. Initiate the use of chlorhexidine skin preparation prior to the application of a sharp appliance including, but not limited to venous catheters, intraosseous infusion needles, lancets, and the delivery of medications or immunizations through syringes either intramuscular, dermal, or subcutaneous.
2. Use aseptic technique to avoid contamination of sterile injection equipment.
3. Do Medication Administration Cross Check prior to injection
4. Needles, cannulae and syringes are sterile, single-use items; they should not be reused for another patient nor to access a medication or solution that might be used for a subsequent patient.
5. Consider a syringe or needle/cannula contaminated once it has been used to enter or connect to a patient's intravenous infusion bag or administration set.
6. Use single-dose vials for parenteral medications whenever possible.
7. Do not administer medications from single-dose vials or ampules to multiple patients or combine leftover contents for later use.
8. If multidose vials must be used, both the needle or cannula and syringe used to access the multidose vial must be sterile.
9. Multidose vials should be stored in accordance with the manufacturer's recommendations; discard if sterility is compromised or questionable.
10. All sharps should be properly disposed into a puncture resistant container as soon as possible.

Spinal Motion Restriction (SMR)

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Need for SMR as determined by Universal Protocol U – 05
- Guidelines:
  A. Long Spine Boards (LSB) have both risks and benefits for patients and have not been shown to improve outcomes. The best use of the LSB may be for extricating the unconscious patient, or providing a firm surface for compressions. However, other devices may be appropriate for patient extrication and movement, including the scoop stretcher.
  B. Utilization of the LSB should occur in consideration of the individual patient's benefit vs. risk.
  C. Patients who should be immobilized with a LSB include: blunt trauma and distracting injury, intoxication, altered mental status, or neurologic complaint (e.g. numbness or weakness), and non-ambulatory blunt trauma patients with spinal pain, tenderness, or spinal deformity.
  D. Patients with penetrating trauma and no evidence of spinal injury do not require spinal immobilization. Patients who are ambulatory at the scene of blunt trauma in general do not require immobilization via LSB, and may or may not require c-collar and spinal precautions.
  E. Whether or not a LSB is utilized, spinal precautions are STILL VERY IMPORTANT in patients at risk for spinal injury. Adequate spinal precautions may be achieved by placement of a hard cervical collar and ensuring that the patient is secured tightly to the stretcher, ensuring minimal movement and patient transfers, and manual in-line stabilization during any transfers.

Procedure:

1. Gather a backboard, straps, C-collar appropriate for patient's size, tape, and head rolls or similar device to secure the head.
2. Explain the procedure to the patient.
3. Second rescuer should maintain the head in a neutral position using in line stabilization (not traction). Place the patient in an appropriately sized C-collar while maintaining in-line stabilization of the C-spine.
4. Assess peripheral motor/sensory function and distal pulses (PMS).
5. Once the collar is secure, the second rescuer should continue to maintain stabilization.
6. Move patient to a long board using a technique appropriate for the patient position which maximizes maintenances of in-line spinal stability. (log roll, four man lift, rapid extrication, etc).
7. Secure the body to the long board followed by the head using straps and head rolls/tape or other similar device. Once the head is secured to the backboard, the second rescuer may release manual in-line stabilization.
8. Place padding in void spaces under and around patient, if time permits.
9. Assess peripheral motor/sensory function and distal pulses (PMS).
10. Some patients, due to size or age, will not be able to be immobilized through in-line stabilization with standard backboards and C-collars. Never force a patient into a position to immobilize them. Such situations may require a second rescuer to maintain manual stabilization throughout the transport to the hospital and continual assessment of distal PMS.
11. Document the time of the procedure in the Patient Care Report (PCR/ePCR).

Splinting

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Immobilization of an extremity for transport, either due to suspected fracture, dislocation, sprain, or injury
- Immobilization of an extremity for transport to secure medically necessary devices such as intravenous catheters

Procedure:

1. Assess and document pulses, sensation, and motor function prior to placement of the splint. If no pulses are present and a fracture is suspected; splint the limb in the position found **without** attempting to reposition it.
2. Remove all clothing and jewelry from the extremity.
3. Select a site to secure the splint both proximal and distal to the area of suspected injury, or the area where the medical device will be placed. In the case of suspected fracture the splint should immobilize the joint above and the joint below the injury whenever possible.
4. Do not secure the splint directly over the injury or device.
5. Place the splint and secure with straps or bandage material (e.g., kling, kerlex, cloth bandage, etc.) depending on the splint manufacturer and design.
6. Assess pulses, sensation, and motor function before and after placement of the splint. If there has been deterioration in any of these 3 parameters due to splinting, remove the splint and reassess.
7. Document the time, type of splint, and the pre and post assessment of pulse, sensation, and motor function in the patient care report (PCR/ePCR).

Standard Precautions

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Standard Precautions are intended to be applied to the care of all patients in all healthcare settings, regardless of the suspected or confirmed presence of an infectious agent. **Implementation of *Standard Precautions* constitutes the primary strategy for the prevention of healthcare-associated transmission of infectious agents among patients and healthcare personnel**.

Contraindications:

- Not Applicable

Notes/Precautions:

- Standard Precautions are based on the principle that all blood, body fluids, secretions, excretions except sweat, non-intact skin, and mucous membranes may contain transmissible infectious agents
- The application of Standard Precautions during patient care is determined by the nature of the provider-patient interaction and the extent of anticipated blood, body fluid, or pathogen exposure. For some interactions (e.g., performing venipuncture), only gloves may be needed; during other interactions (e.g., intubation), use of gloves, gown, and face shield or mask and goggles is necessary

Procedure:

Wear the appropriate level of PPE based on the mode of transmission of the suspected infectious agent when the nature of the anticipated patient interaction indicates contact with blood or body fluids may occur. Where respiratory vectors are considered employ PPE in accordance with the Respiratory Precautions Procedure.

Gloves

1. Wear gloves when it can be reasonably anticipated that contact with blood or other potentially infectious materials, mucous membranes, non-intact skin, or potentially contaminated intact skin (e.g., of a patient incontinent of stool or urine) could occur.
2. Remove gloves after contact with a patient and/or the surrounding environment (including medical equipment) using proper technique to prevent hand contamination.
3. Do not wear the same pair of gloves for the care of more than one patient.

Gowns

4. Wear a gown, that is appropriate to the task, to protect skin and prevent soiling or contamination of clothing during procedures and patient-care activities when contact with blood, body fluids, secretions, or excretions is anticipated.
5. Wear a gown for direct patient contact if the patient has uncontained secretions or excretions.
6. Remove gown and perform hand hygiene before leaving the patient's environment.
7. Do not reuse gowns.

Mouth, nose, eye protection

8. Use PPE to protect the mucous membranes of the eyes, nose and mouth during procedures and patient care activities that are likely to generate splashes or sprays of blood, body fluids, secretions and excretions. Select masks, goggles, face shields, and combinations of each according to the need anticipated by the task performed.

9. During aerosol-generating procedures (e.g., suctioning of the respiratory tract, advanced airway maneuvers) in patients who are not suspected of being infected with an agent for which respiratory protection is otherwise recommended (e.g. M. tuberculosis, SARS or hemorrhagic fever viruses), wear one of the following: a face shield that fully covers the front and sides of the face, a mask with attached shield, or a mask and goggles (in addition to gloves and gown).

Surgical Cricothyrotomy

P EMT-P P

Clinical Indications:

- Patient ≥10 years of age and as indicated by the Failed Airway Protocol R – 02.

Contraindications:

- Anytime a less invasive maneuver would allow oxygenation of the patient
- Tracheal transection
- Fractured larynx, significant damage to the cricoid cartilage or larynx or inability to identify appropriate landmarks

Notes/Precautions:

- In order to minimize the risk of dislodgement:
  - The individual completing the procedure should direct any/all patient movement
  - BVM is to be disconnected from the ET tube during any patient movement
  - The ET tube is to be reassessed following any patient movement

Procedure:

1. Position patient supine with head slightly extended unless contraindicated due to suspected cervical spine injury.
2. Prepare anterior surface of the neck with chlorohexadine as time allows.
3. Locate the cricothyroid membrane.
4. Place thumb and index finger of non-dominant hand on either side of the tracheal cartilage to stabilize the trachea and anchor and stretch the skin slightly.
5. Using a needle connected to a 12 cc syringe pierce the skin and cricothyroid membrane at a 45-degree angle, directing the catheter tip inferiorly while pulling suction on the syringe until air is aspirated freely.
6. Maintain the needle/syringe assembly in place as landmark, perform a vertical incision in the midline beginning ½ - 1 inch superior to the needle and extending ½ - 1 inch inferior to the needle.
7. Visualize the cricoid membrane with needle assembly as a landmark; perform a horizontal punch incision through the cricoid membrane. Upon completion of this incision, activate the blade safety component.
8. With the needle assembly remaining in place as a landmark insert the handle of the scalpel in a horizontal plane and rotate 90 degrees to dilate the incision.
9. With the scalpel handle remaining in place as a landmark remove the needle/syringe assembly advance an eschmann introducer (Bougie) through the incision. The bougie should advance easily until “hold-up.” Remove the scalpel and secure the sharp.
10. Advance an appropriate sized cuffed endotracheal tube (ETT) over the bougie and remove the bougie.
11. Maintaining control of the proximal end of the ETT, inflate the cuff and confirm placement of the ETT.
12. Secure the ETT with tape maintaining continuous stabilization by hand. ETT is to be secured by hand at all times.
13. Providers may continue to use backboards to assist in patient movement as needed.

Suctioning-Advanced

I	EMT- I	I
P	EMT- P	P

Clinical Indications:

Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient currently being assisted by an airway adjunct such as a naso-tracheal tube, endotracheal tube, tracheotomy tube, or a cricothyrotomy tube

Procedure:

1. Ensure suction device is in proper working order.
2. Preoxygenate the patient.
3. Attach suction catheter to suction device, keeping sterile plastic covering over catheter.
4. Using the proximal opening of the airway and the suprasternal notch and the endpoints, measure the depth desired for the catheter (judgment must be used regarding the depth of suctioning with cricothyrotomy and tracheostomy tubes).
5. If applicable, remove ventilation devices from the airway.
6. With the thumb port of the catheter uncovered (suction off), insert the catheter through the airway device.
7. Once the desired depth (measured in #4 above) has been reached, occlude the thumb port and remove the suction catheter slowly.
8. Small volume (< 10 ml) of normal saline lavage may used as needed.
9. Reattach ventilation device (e.g., bag-valve mask) and ventilate the patient
10. Document time and result in the patient care report (PCR).

Taser® Probe Removal

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Patient with uncomplicated conducted electrical weapon (Taser®) probes embedded subcutaneously in non-sensitive areas of skin

Contraindications:

- Patients with conducted electrical weapon (Taser®) probe penetration in vulnerable areas of body as mentioned below should be transported for further evaluation and probe removal
  - Probes embedded in skin above level of clavicles, genitalia or female breasts
  - Suspicion that probe might be embedded in bone, blood vessel, or other sensitive structure

Procedure:

1. Ensure wires are disconnected from weapon.
2. Stabilize skin around probe using non-dominant hand.
3. Grasp probe by metal body using dominate hand.
4. Remove probe in single quick motion.
5. Wipe wound with chlorohexadine wipe and apply dressing.
6. Treat probes as exposed sharps hazard and dispose of accordingly.
   - Law Enforcement may need to keep as evidence

Tourniquet

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Life threatening extremity hemorrhage that can not be controlled by other means
- Serious or life threatening extremity hemorrhage where conditions (patient location, tactical or hazmat environment, etc) prevent the use of standard hemorrhage control techniques
- Life threatening condition(s) that require immediate attention and significant extremity hemorrhage where the use of a tourniquet is more expedient than standard hemorrhage control

Contraindications:

- Non-extremity hemorrhage
- Proximal extremity location where tourniquet application is not practical

Procedure: Guiding Principle: place it High and Tight

1. Place tourniquet proximal to wound (axillary area for upper extremities and inguinal area for lower extremities).
2. Tighten until loss of distal pulses. Failure to adequately tighten the tourniquet to the loss of pulses may cause restriction of venous return and result in a compartment syndrome.
3. Secure tourniquet. Tourniquet should be easily visible on the affected limb.
4. Note **time** of tourniquet application and communicate this to receiving care providers.
5. Dress wounds per standard wound care protocol.
6. If delayed or prolonged transport (> 30 minutes) and in the absence of amputation or continued hypotension/shock the tourniquet may be **LOOSENED** to assess for bleeding. Do **NOT** remove the tourniquet. If bleeding continues re-tighten the tourniquet to loss of distal pulses and notify the receiving facility. If there is no ongoing bleeding leave the tourniquet in place but assure it is loosened to prevent venous occlusion.
7. Provide pain control per Pain Management Protocol M-16 or PM-06 as needed.
8. An additional tourniquet may be placed just distal to the 1st one if, the hemorrhage is unable to be controlled with 1 tourniquet.

Vagus Nerve Stimulator (VNS)

B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Patients with an implanted Vagus Nerve Stimulation device used in the management of seizures and a magnet for increasing stimulation or temporarily disabling the device

Contraindications:

- Use of magnet for any other condition other than activating the VNS device

Notes/Precautions:

- The patient and/or family should be familiar with the device and are usually able to manage the patient/device

Procedure:

1. Assist the patient and/or family in using the device as they have been instructed.
2. In the absence of a known procedure the stimulation may be increased in the presence of seizure:
    - Pass the magnet over the vagal nerve stimulator generator for 1-2 seconds;
    - Repeat process in 60 seconds;
    - May repeat up to total of 3 times.
3. Transport patient to hospital.

Wound Care

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Protection and care for open wounds prior to and during transport

Procedure:

1. Use appropriate personal protective equipment, including gloves, gown, eye protection and mask as indicated.
2. If active bleeding, elevate the affected area if possible and hold direct pressure. Do not rely on "compression" bandage to control bleeding.
3. Once bleeding is controlled, irrigate contaminated wounds with saline as appropriate:
   - Avoid if bleeding is difficult to control
   - Consider analgesia per protocol prior to irrigation
4. Cover wounds with sterile gauze/dressings. Check distal pulses, sensation, and motor function to ensure the bandage is not too tight.
5. Monitor wounds and/or dressings throughout transport for bleeding.
6. Document the wound and assessment and care in the patient care report (PCR).

Equipment Failure

(includes single patient use disposables)

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Purpose:

Define a process for tracking, reporting and evaluation of patient care equipment that has failed to function as it was intended while managing a patient.

Procedure:

1. To minimize the risk of equipment failure each agency shall maintain a daily equipment check sheet and periodically test biomedical equipment in accordance with manufacturer recommendations. This does not apply to sterile/clean packaged single patient use items. These type items must be inspected and/or tested prior to patient application.
2. If there is a failure of equipment (including single patient use disposables) during patient care which is deemed essential to the ongoing care of the patient immediately contact the EMS communications center, advise them of the failure, and have the nearest appropriate resource dispatched. This may be a supervisor, an ambulance, or some other resource, depending upon patient need and availability of additional equipment (including single patient use disposables) readily available on scene.
3. Based on the condition of the patient request that the resource respond either emergency (Code 3) or non-emergency (Code 1). The decision to await the arrival of replacement equipment is at the discretion of the on-scene transport provider in charge and dependent upon how essential the equipment is to the ongoing management and/or monitoring of the patient.
4. Closely monitor and treat the patient to the best of your ability with the remaining functional equipment and supplies.
5. While it is appropriate to notify supervisory personnel of the failure care and transport should not be delayed while awaiting the arrival of a supervisor (unless the supervisor is responding as the nearest resource based on #2 above).
6. All equipment (including single patient use disposables) associated with the failure shall be gathered and secured for inspection by each responsible department/organization. This includes all cables, electrodes, tubing, masks, or any other equipment associated with the failure. This equipment shall not be utilized in patient care activity until the Office of the Medical Director has received documentation that the equipment was evaluated by the manufacturer or their approved service agent. Accessories such as those mentioned above should be left attached to the failed equipment in the manner that they were attached at the time failure was noted. Contaminated equipment or failed single patient use disposable items shall be secured in an appropriate biological container (sealed bag or sharps shuttle).
7. An **Equipment Failure Report Form** shall be completed by the provider and forwarded to the Office of the Medical Director and the Organization's designated PI Officer as soon as practical after the failure. **In all cases, this report shall be completed prior to the end of the provider's tour of duty**. www.atcomd.org for form.
8. This procedure should be applied in addition to any process established by a System organization and is not considered a substitute for the organizational reporting requirements.

Double Sequential External Defibrillation

P EMT- P P

Clinical Indications:

- Refractory to ≥ 5 shocks **AND,**
- Administered 450mg Amiodarone **AND,**
- V-fib/pulseless V-tach NEVER converted

Procedure:

1. The code Commander should complete the cardiac arrest checklist to assure all interventions have been performed and causes of cardiac arrest have been considered.
2. Ensure quality of CPR is being performed and the above criteria have been met.
3. Prepare the sites for attachment of an additional set of external defibrillation pads by drying the sites and minimizing interference of hair or other obstacles to good pad adhesion.
4. Apply a new set of external defibrillation pads in the anterior/posterior while assuring they do not contact the initial set of pads.
5. Assure that controls for the second cardiac monitor are accessible to the Code Commander
6. Select the maximum energy setting on both devices. Charge both devices 15 seconds in advance of the anticipated break in CPR. Assure chest compressions continue while the device is charging.
7. At the prescribed time in the compression cycle discontinue compressions and assess the rhythm.
8. If a shock indicated assertively state, “CLEAR” and visualize from the patient’s head to toe to assure no one is touching the patient and deliver the DSED by depressing both shock buttons simultaneously.
9. Immediately resume chest compressions. After 2 minutes of continuous CPR, pause briefly (< 10 sec) to perform pulse check and analyze rhythm.
10. Repeat the procedure every two minutes as indicated by the patient’s response and rhythm.

Valsalva Maneuver

P EMT- P P

Clinical Indications:

- Alert and Stable patients with a symptomatic narrow complex SVT

Contraindications:

- Should not be attempted in patients with history of sick sinus syndrome, carotid bruits, cerebrovascular disease or when digitalis toxicity exists.
- Pediatric Patients
- Carotid sinus massage
- Ice water emersion of the face

Notes/Precautions:

- Syncope, Altered Mental Status, CVA, sinus arrest, high grade AV block, prolonged asystole and ventricular tachycardia in patients with digitalis toxicity.

Procedure:

1. Administer oxygen.
2. Place the patient on the heart monitor.
3. Start an IV TKO.
4. Run a continuous rhythm strip throughout the procedure.
5. Request the patient to inhale, hold their breath, and bear down while tightening the chest and abdominal muscles as if they were straining while having a bowel movement. They should hold this pressure for 5 to 10 seconds. The patient is then instructed to suddenly release and breathe out.
6. Observe monitor for changes.
7. Reassess vital signs.
8. May repeat procedure x2.
9. Document all changes on PCR/ePCR.

Office of the Medical Director
City of Austin/Travis County EMS System

Appendices

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Approved Abbreviations

To ensure consistency in patient care reporting, the following is a list of System approved abbreviations

-A-			
Â	Before	**A&Ox3**	Alert & oriented to (PPT)
AAA	Abdominal aortic aneurysm	**Abd**	Abdomen
AB	Abortion	**ABC**	Airway, breathing, circulation
ABG	Arterial blood gas	**a.c.**	Before meals
A/C	Aircraft	**ACE**	Angiotensin-converting enzyme
ACS	Acute Coronary Syndrome	**a.d.**	Right ear (auris dexter)
ADD	Attention deficit disorder	**A.E.**	Above elbow (amputation)
AED	Automated external defibrillator	**A Fib**	Atrial fibrillation
Af	Atrial flutter	**AIDS**	Acquired immunodeficiency syndrome
AIVR	Accelerated Idioventricular rhythm	**A.K.**	Above knee (amputation)
ALS	Advanced Life Support	**AMI**	Acute myocardial infarction
Ant	Anterior	**AOS TF**	Arrived On Scene To Find
APAP	Acetaminophen (APAP)	**APS**	Adult Protective Services
APGAR	Appearance, Pulse, Grimace, Activity, Respiratory effort	**ARDS**	Adult respiratory distress syndrome
AS	Left ear (auris sinistra)	**ASA**	Acetyl salicylic acid (Aspirin)
ATF	Arrived to find	**AV**	Atrioventricula
AVA	Alternate vascular access	**AVM**	Arteriovenous malformation

-B-			
BBB	Bundle branch block	**BBS**	Bilateral breath sounds
B.E.	Below elbow (amputation)	**BGL**	Blood glucose level
B.I.A.D. **b.i.d.**	Blind Insertion Airway Device Twice a day	**B.K**	Below knee (amputation)
BLS	Basic life support	**BM**	Bowel movement
BP	Blood Pressure	**BS**	Breath, bowel sounds
BSA	Body surface area	**BVM**	Bag valve mask

Approved Abbreviations

-C-			
C	With	**Cº**	Centigrade
C/C	Chief complaint	**c/o**	Complains / complaining of
CA	Carcinoma, cancer	**Ca++**	Calcium
CABG	Coronary artery bypass graft	**CAD**	Coronary artery disease
CAO x 3 or 4 or PPT	Conscious, Alert, & Oriented to Person, Place, Time & Events	**CAT/CT**	Computerized axial tomography scanner
CBC	Complete blood count	**Cc**	Cubic centimeter
Cm	Centimeter	**CCB**	Calcium channel blocker
CCU	Coronary / critical care unit	**CHF**	Congestive heart failure
CHI	Closed head injury	**CID**	Cervical Immobilization Device
CK	Creatine kinase	**CK-MB**	Creatine kinase myocardial band
Cl	Chlorine	**CNS**	Central nervous system
COPD	Chronic obstructive pulmonary disease	**CO**	Cardiac output / carbon monoxide
CO2	Carbon dioxide	**+CMS**	Positive circulatory, motor & sensory function
CNS	Central nervous system	**CP**	Chest pain
CPAP	Continuous positive airway pressure	**CPR**	Cardiopulmonary resuscitation
CPS	Child Protective Services	**CRT**	Capillary refill time
CPSS	Cincinnati Prehospital Stroke Screen	**CSF**	Cerebrospinal fluid
C-spine	Cervical spine		
CSM	Carotid sinus massage	**CTA**	Clear to auscultation
CVA	Cerebrovascular accident	**CVP**	Central venous pressure
Cx	Chest	**CXR**	Chest x-ray

-D-			
DCAP BTLS	Deformities, Contusions, Abrasions, Penetrations, Paradoxical movements, Burns, Tenderness, Lacerations, Swelling	DIC	Disseminating intravascular coagulation
Diff	Difficulty	**Disch**	Discharge
D&C	Dilatation & curettage	**dL**	Deciliter (1/10 liter: 100 ml)

Approved Abbreviations

DAE	Dysbaric air embolism	**DKA**	Diabetic ketoacidosis
DM	Diabetes mellitus	**DNAR**	Did not attempt resuscitation
DNR	Do-not-resuscitate	**DOB**	Date of birth
DOE	Dyspnea on exertion	**DOS**	Dead on scene
DPT	Diphtheria, pertussis, tetanus	**DT's**	Delirium tremens
D5W	Dextrose 5% in water	**D10W**	Dextrose 10% in water
D25W	Dextrose 25% in water	**D50**	50% Dextrose
DVT	Deep vein thrombosis	**Dx**	Diagnosis

-E-

ECG/EKG	Electrocardiogram	**EDC**	Estimated date of confinement
EEG	Electroencephalogram	**EF**	Ejection fraction
e.g.	For example	**EPS**	Electrophysiological study
ER/ED	Emergency room/department	**Epi**	Epinephrine
Est.	Estimated	**ESRD**	End stage renal disease
ETA	Estimated time of arrival	**ET**	Endotracheal
ETC02	End-tidal carbon dioxide	**ETOH**	Ethyl alcohol, alcoholic beverage
ETT	Endotracheal tube	**EXP**	Expansion
EXT	Extremity(s)		

-F-

F	Female	**F°**	Fahrenheit
FBAO	Foreign body airway obstruction	**FHx**	Family history
FHR	Fetal heart rate	**Fr**	French
FSP	Full spinal precaution	**FUO**	Fever of unknown origin
Fx	Fracture		

-G-

G (+ #)	Gravida (G3, G4 etc.)	**GCS**	Glasgow coma scale/score
GERD	Gastroesophageal reflux disease	**GI**	Gastrointestinal
Gm, g	Gram	**Gtts**	Drops
GU	Genitourinary	**GYN**	Gynecology

Approved Abbreviations

-H-			
h, hr	Hour	**H/A**	Headache
HAV	Hepatitis A virus	**HBV**	Hepatitis B virus
HCTZ	Hydrochlorothiazide	**HCV**	Hepatitis C virus
HEENT	Head, eyes, ears, nose, throat	**H&H**	Hemoglobin and hematocrit
Hg	Mercury	**HIV±**	Human immunodeficiency virus
HR	Heart rate	**HRT**	Hormone replacement therapy
hs	At bedtime	**HTN**	Hypertension
Hx	History		

-I-			
ICD	Implanted cardioverter defibrillator	**ICP**	Intracranial pressure
ICU	Intensive care unit	**IDDM/DM I**	Insulin dependent diabetes mellitus (Type I)
ILS	Intermediate life support	**IM**	Intramuscular
IMV	Intermittent mechanical ventilation	**Inf**	Inferior
IO	Intraosseous	**IPPB**	Intermittent positive pressure breathing
IU	International units	**IV**	Intravenous
IVP	IV push	**IVR**	Idioventricular rhythm

-J-			
J	Joules	**JVD**	Jugular venous distention

-K-			
K+	Potassium	**KED**	Kendrick extrication device
KTD	Kendrick traction device	**KVO**	Keep vein open
Kg	Kilogram		

Approved Abbreviations

-L-			
L	Left or Liter	**L spine**	Lumbar spine
L&D	Labor and delivery	**L/S**	Lung sounds
Lac	Laceration	**LAD**	Left axis deviation / left anterior descending
Lbs	Pounds	**LBBB**	Left bundle branch block
LGL	Lown-Ganong-Levine syndrome	**Liq**	Liquid
LLQ	Lower left quadrant	**LMA**	Laryngeal Mask Airway
LMP	Last menstrual period	**LOC**	Level/loss of consciousness
Lpm	Liter per minute	**LR**	Lactated Ringer's
LSB	Long spine board	**LSD**	Lysergic acid diethylamide
LUQ	Left upper quadrant	**LVAD**	Left Ventricular Assist Device
LVH	Left ventricular hypertrophy		

-M-			
m	Meter	**M**	Male
mA	Milliamperes	**mg**	Milligram
MAE	Moves all extremities	**MAP**	Mean arterial pressure
Mcg	Microgram	**MCL**	Midclavicular line, modified chest lead
MDI	Metered dose inhaler	**mEq**	Milliequivalent
mL	Milliliter	**mm**	Millimeter
MMR	Measles, mumps, rubella	**MOI**	Mechanism of injury
Mph	Miles per hour	**MS**	Morphine Sulfate, Multiple Sclerosis
MVA	Motor vehicle accident	**MVP**	Mitral valve prolapse

-N-			
Na+	Sodium	**NAD**	No apparent / acute distress
N/C	Nasal canula	**NES**	Non-English Speaking
NGT	Nasogastric tube	**NH**	Nursing home
NICU	Neurological, neonatal intensive care unit	**NIDDM/DM II**	Non insulin dependent diabetes mellitus (Type II)
NKA	No known allergies	**NKDA**	No known drug allergies
NMB	Neuromuscular blockade	**NOI**	No obvious injury

Approved Abbreviations

NP	Nurse Practitioner	**NPA**	Nasopharyngeal airway
NPO	Nothing by mouth	**NRB**	Non-rebreather mask
NS	Normal saline	**NSAID**	Non-steroidal anti-inflammatory drug
NT	Nasotracheal	**NTG**	Nitroglycerin
N/V/D	Nausea, vomiting, diarrhea		

-O-

02	Oxygen	**OB**	Obstetrics
OBS	Organic brain syndrome	**OBV**	Obvious
OD	Overdose, right eye (oculus dexter)	**OLMC**	On-line medical consultation
OOH	Out of hospital	**OPA**	Oropharyngeal airway
OPP	Organophosphate poisoning	**OPQRST**	Pain Assessment: onset, provocation, quality, radiation, severity, time
OS	Left eye (oculus sinister)	**OR**	Operating room
oz.	Ounce	**OSS**	Oregon Spine Splint
Ø	No or none		

-P-

p	After	**p.c.**	After meals
P (+ #)	Parity (P3, P4 etc)	**PA**	Physician assistant, pulmonary artery
PAI	Pharmacologically assisted intubation, Pre-Arrival Instructions	**PASTMED**	Provoking incident, Associated chest pain, Sputum production, Time of onset, Meds, Exercise tolerance, Diagnosis
PCI	Percutaneous coronary intervention	**pC02**	Carbon dioxide pressure
PCP	Phencyclidine, Primary Care Physician	**PCT**	Patient care to
PE	Physical exam, pulmonary emboli, pulmonary edema	**PEA**	Pulseless electrical activity
PEEP	Positive end expiratory pressure	**PERRL**	Pupils equal round reactive to light
PICU	Pediatric intensive care unit	**PID**	Pelvic inflammatory disease
PMD	Primary/Private medical doctor	**Pn**	Pain
PND	Paroxysmal nocturnal dyspnea	**P02**	Partial pressure of oxygen

Approved Abbreviations

PO	By mouth	**POC**	Position of comfort
post.	Posterior	**POV**	Privately operated/owned vehicle
p.r.	Per rectum	**PRBC's**	Packed red blood cells
PRN	As needed	**PSVT**	Paroxysmal supraventricular tachycardia
Pt.	Patient	**PTA/PTOA**	Prior to (our) arrival
PTS	Pediatric trauma score	**PVC**	Premature ventricular contraction
PVT	Polymorphic ventricular tachycardia	**P/W/D**	Pink warm and dry

-Q-

Q	Every	**Qh**	Every hour
q.i.d.	Four times a day		

-R-

R	Right	**RAD**	Right axis deviation, reactive airway disease
RBBB	Right bundle branch block	**Rbc**	Red blood cell, red blood (cell) count
RCA	Right coronary artery	**RHD**	Rheumatic heart disease
RLQ	Right lower quadrant	**ROSC**	Return of spontaneous circulation
+ROM	Positive range of motion	**RN**	Registered nurse
RR	Respiratory rate	**RSV**	Respiratory syncytial virus
RTS	Revised trauma score	**RUQ**	Right upper quadrant
Rx	Prescription		

-S-

š	Without	**s/s**	Signs / symptoms
SA02	Oxygen saturation of arterial oxyhemoglobin	**SARS**	Severe acute respiratory syndrome
SBP	Systolic blood pressure	**SC, SQ**	Subcutaneous
SCI	Spinal cord injury	**SCUBA**	Self contained underwater breathing apparatus
SIDS	Sudden infant death syndrome	**SL**	Sublingual, Saline Lock
SOAPE	Subjective, Objective, Assessment, Plan, Enroute	**SOB**	Shortness of breath

Approved Abbreviations

SROM	Spontaneous Rupture of Membranes	**St**	States
STD	Sexually transmitted disease	**SUV**	Sport utility vehicle
SVT	Supraventricular tachycardia	**Sx**	Symptoms

-T-

T spine	Thoracic spine	**TBI**	Traumatic brain injury
Temp	Temperature	**tab**	Tablet
TB	Tuberculosis	**Tbsp**	Tablespoon
TCP	Transcutaneous pacing	**TCA**	Tricyclic antidepressant
TdP	Torsades de Pointes	**TIA**	Transient ischemic attack
t.i.d.	Three times a day	**TKO**	To keep open
TOT	Turned Over To	**Tsp**	Teaspoon
Tx	Treatment		

-U-

u	Unit	**µg**	microgram
U/A	Upon arrival, urine analysis	**URI**	Upper respiratory infection
UTI	Urinary tract infection	**UTL**	Unable to locate
UTO	Unable to obtain		

-V-

VD	Venereal disease	**Vol**	Volume
VO	Verbal order	**VF**	Ventricular fibrillation
VS	Vital signs	**Vt**	Tidal volume
VT	Ventricular tachycardia		

-W-

w/	With	**w/o**	Without, wide open
WDWN	Well developed, well nourished	**WNL**	Within normal limits
WPW	Wolf-Parkinson-White		

-X-

X-fer	Transfer	**X-prt**	Transport

-Y-

y/o	Years old

Approved Abbreviations

-Symbols-			
α	Alpha	ß	Beta
@	At	?	Questionable, possible
♀	Female	♂	Male
1°	First degree	2°	Second degree
3°	Third degree	x	Times
△	Delta (change)	+	Positive
–	Negative	=	Equal
≠	Not equal to	≈	Approximately
↓	Decreased / below / lower	↑	Elevated / increased / upper
→	Move/went to	↔	Between
#	Number		

Hospital Transport Guidelines

Decisions regarding patient destination should be made in the following order, AGE appropriate and: Trauma ACTIVATION, ***if not then*** Condition listed in CR-13 (closest designated facility with patient consent) ***if not then*** Patient and/or family preference ***if not then*** Closest facility listed.

System Approved Transport Facilities

University Medical Center Brackenridge	Dell Children's Medical Center	Heart Hospital of Austin	North Austin Medical Center
North Austin Medical Center Children's Hospital	Seton Medical Center Austin	Seton Northwest Hospital	Seton Southwest Hospital
South Austin Medical Center	St. David's Medical Center	Westlake Medical Center	Lakeway Regional Medical Center
Scott & White Hospital Round Rock	Seton Medical Center Williamson	Cedar Park Regional Medical Center	Seton Medical Center Hays
Round Rock Medical Center	St. David's Pflugerville (FSED)	St. David's Cedar Park (FSED)	St. David's Bee Cave (FSED)

SINGLE TRAUMA PATIENT IN THE UNIT

Trauma ACTIVATION > 14 yrs. **OR** ≤ 14 yrs. and pregnant closest Adult Level 1 or 2 Trauma Center.

Trauma ACTIVATION ≤ 14 yrs. Dell Children's Medical Center unless pregnant, cardiac arrest or a prolonged transport would potentially compromise the patient, then closest Level 1 or 2 Trauma Center.

MULTIPLE TRAUMA PATIENTS IN THE SAME UNIT

Guiding principle of trauma transportation destination decision with multiple patients in the unit: The most severely injured patient determines the destination unless a prolonged transport would potentially compromise either patient, then closest Level 1 or 2 Trauma Center.

An "ALERT" status declaration is made to Communications and is for their assistance (as needed) in determining the most appropriate transport destination (based on time, distance and facility level/type). Communications will provide an "ALERT" notification to the selected Hospital. Then, communications will advise and facilitate the most expeditious mode of Transport (Ground or Air).

For the System transport criterion matrix refer to **Clinical Reference CR – 13.**

Infection Prevention
Exposure Management

Infection Prevention

Adherence to infection Prevention principles is the responsibility of each Provider. All EMS Providers must be aware of well-known infectious agents (Hepatitis B, influenza, etc.), as well as emerging new pathogens (Avian Flu, SARS, etc.) that present challenges to medicine and risks to Providers. A personal commitment to employing basic infection Prevention measures on every single incident will provide the simplest and best protection against infectious diseases. Make it a habit!

Basic Protection Guidelines and Immunizations

The infection "triad" requires a portal of entry, an adequate amount of the infectious agent, and a susceptible host in order for a person to actually become infected. Through the engineering of safer equipment and the use of Personal Protective Equipment (PPE), we can prevent portals of entry and reduce the amount of materials to which you may be exposed.

Although it sounds simplistic and obvious, individuals that are well nourished, rested, and physically fit have immune systems that are more responsive and better prepared to mount an effective fight against invading pathogens. Taking care of ourselves decreases our long-term morbidity and allows us to recover more quickly should we become infected.

In any health care environment, Providers can expect to be routinely exposed to infectious agents. Immunizations are an extremely important weapon against infection from many of the more common agents. Keeping current on appropriate immunizations protects you, protects patients from becoming infected by you, and decreases overall disease transmission (this is a concept in public health known as herd immunity). As always, you should consult with your regular physician regarding your health care and immunization status. For healthcare workers, the currently available recommended immunizations (or documented immunity) include:

- Hepatitis B
- Measles
- Mumps
- Rubella
- Varicella
- Tetanus
- Diphtheria
- Pertussis
- Influenza (Pandemic & seasonal)
- Hepatitis A

Attention to ongoing hand washing, especially during the cold and flu season, is very important. Contact with contaminated surfaces provides a ready way for you to become infected and for you to infect others. Hands should be washed after each patient contact, the removal of gloves, and after cleaning all equipment. Waterless, alcohol-based hand cleaners are an acceptable alternative to soap and water provided there is no gross organic material present. To be effective, hand washing with soap and water needs to be performed for a minimum of twenty (20) seconds, using a vigorous rubbing together of all surfaces of lathered hands followed by thorough rinsing under a stream of water. If soap and water are not available at the scene, a waterless hand wash/wipe should be used before boarding the vehicle. Upon return to the station, all Providers should wash their hands with soap and water.

Additionally, it is important to conduct a self-check of your skin (particularly hands and exposed surfaces) prior to any potential patient contact. Identify scrapes, wounds, or other non-intact

surfaces and cover all open and scabbed wounds with bandages. The integrity of any bandages should be monitored during your shift to ensure the continuation of their protection.

Personal Protective Equipment (PPE)

PPE is designed to stop the transmission chain of an infectious agent by preventing potentially infectious microorganisms from contaminating a Provider's skin, mucous membrane, or clothing, and subsequently being transmitted to others. While PPE reduces the risk, it does not completely eliminate the possibility of infection, and is only effective if chosen and used correctly.

Remember, PPE should always be readily available, not just carried in the vehicle for those "surprise" circumstances where the possibility of exposure exists.

There are instances that the selection of appropriate PPE should be obvious and regarded by all Providers as standard practice. These include:

- Anytime patient contact is made and, it can be reasonably anticipated that contact with blood or other potentially infectious fluids will occur, gloves should be worn.
- During any type of airway management procedure, or other situation that fluid splash contact with the Provider's face is a possibility, the protection of mucous membrane is crucial. Effective mucous membrane protection may be afforded by use of the combination eye shield and mask apparatus, or a "Fit Tested" N95 mask in conjunction with department issued or approved eyewear (goggles).
- Whenever the possibility exists that a patient's bodily fluids could be splashed onto or directly contact a Provider, gowns should be utilized.

There are times when the selection of proper PPE, especially respiratory protection, is not so obvious and must be made based on how a disease is spread. In these situations, the difficulty in determining the appropriate level of protection is that a truly informed decision usually can't be made until a patient assessment is completed and/or a history is obtained. By then, it's too late! For that reason, a patient exhibiting any of the following signs or symptoms should be a signal to Providers, that in addition to gloves and, possibly a gown, some level of respiratory protection is required:

- Productive cough (with or without blood)
- Fever and chills with coughing
- Night sweats
- Dramatic (>10%) unexplained weight loss
- Fatigue (in the presence of other symptoms)
- Hemoptysis (coughing up blood)
- Nuchal rigidity (stiff neck)
- Chest and upper torso rash

In determining the type of respiratory protection needed, remember that a "Fit Tested" N95 mask will afford the best protection against disease spread via airborne particles (i.e., tuberculosis), while the combination eye shield and mask apparatus is appropriate protection against disease spread through larger droplets (i.e., meningitis). In either case, protection is only afforded if the mask is worn properly.

- For a patient exhibiting signs and/or symptoms of a disease spread via airborne particles, the "Fit Tested" N95 mask should be donned prior to entering an enclosed area that the patient may have contaminated
- When caring for a patient with signs and symptoms of a disease spread through larger droplets, a surgical type mask or combination eye shield and mask should be donned as soon as possible, and worn anytime the Provider is within six (6) feet of the patient.

- Provide surgical masks to all patients with symptoms of a respiratory illness who can tolerate its placement. Provide instructions on the proper use and disposal of masks.
- For patients who cannot wear a surgical mask; place a non-rebreather mask with supplemental O_2, in addition to any additional medical treatment (s). Provide tissues and instructions on when to use them (i.e., when coughing, sneezing, or controlling nasal secretions), how and where to dispose of them and, the importance of hand hygiene after handling these materials.
- Continue to use droplet and airborne precautions to manage patients with respiratory symptoms until it is determined that the cause of symptoms is not an infectious agent that requires precautions beyond standard precautions.
- When in doubt, maximal rather than minimal PPE should be selected.

Sharps Hazards

- The greatest risk for an occupational exposure to blood occurs with the use of needles and other sharp utensils. The most common occupational blood exposure occurs when needles are recapped. Needles that have contact with human tissue should not be recapped, re-sheathed, bent, broken, or separated from disposable syringes.
- Used needles and other sharps shall be disposed of in approved sharps containers as soon as possible.
- Providers should ensure that no sharp is used in a manner inconsistent with its intended purpose or attempt to circumvent the safety features of the device.
- See Crime Scene Preservation (in Procedures Section) regarding used sharps at a potential crime scene.

Cleaning and Disinfection of Equipment and Work Areas

Remember how important it is to keep all medical equipment clean and free from infectious agents. The essential part of cleaning and disinfecting equipment is ensuring the removal of all accumulated organic material. Failure to remove organic material provides a continuing breeding ground for organisms. After the removal of the organic material, disinfecting can take place.

Be thorough with your cleaning and use your PPE eyewear if you need to do heavy cleaning that may result in splashing. Remember to clean any surface that your gloved hand may have contacted. After applying your disinfectant, permit the equipment to air dry. Wiping dry the wet disinfected surface will negate the effects of the agent and render it useless. Upon completion of the cleaning, make sure you wash your hands.

Exposure Follow-up

The purpose of PPE, and always using sound infection prevention practices, is to reduce or eliminate the potential for infection. On occasion, a Provider is exposed to blood, bodily fluids, or airborne particles, and appropriate action must be taken. Many of these actions are time-dependent so it's important to initiate the reporting and follow up process as soon as possible. Besides adherence to sound infection prevention practices, the most important thing you can do to ensure your health and well-being is to educate yourself. Become knowledgeable about infectious diseases, and the exposure reporting and follow-up process for your organization. Knowledge of the process specific to your organization ensures the right people are notified in a timely manner should post-exposure testing, follow-up, and documentation be required.

Infection Prevention
Exposure Management

The following are general guidelines to be followed should you experience, or suspect that you have experienced, an exposure to blood or other infectious material:

- Withdraw from patient care as soon as it is appropriate. This is usually at the completion of care but may need to occur sooner in some cases.
- Take self-care steps and cleanse the wound (or irrigate the membranes) with the appropriate solution immediately after any exposure to a patient's bodily fluids. Don't attempt to "milk" any needle stick injuries. This does not appear to be useful in removing source patient material.

Exposures require immediate intervention. Report any suspected exposure to communicable diseases to the appropriate designated individual in your department as quickly as possible. Questions and consultation regarding post exposure actions should be immediately directed to the Infection Preventionist through Austin/Travis County EMS Communications. Consultation may reveal that medical evaluation of the exposure, testing, follow-up, and/or additional documentation is necessary. In the case of a blood exposure due to needle stick (or other sharps), spray to mucous membrane, or patient blood contacting non-intact skin, the Provider should immediately travel, or be transported to, the closest appropriate facility for evaluation.

Patient Transport Condition Classification System

1. Once a patient has been assessed they should be assigned a transport code in the "Alpha, Bravo, Charlie, Delta or Echo" coding system based on acuity as determined by the transport medic
2. Trauma patients will be further categorized according to the Trauma Categorization Criteria
3. During a Mass Casualty Incident (MCI), patients should be categorized according to a “Triage” coding system.
4. Patient Transport Condition Classification System Patient transport condition classification is based on the magnitude of abnormal physiology or the potential for clinical deterioration. Specific interventions are not the sole determinate of abnormal physiology.

ALPHA A patient condition or circumstance that appears to require little or no medical evaluation or treatment. An example would be a minor being transported to DCMC because no parental consent for refusal is available. MCI designation- “Green” / “Minimal”

BRAVO A patient condition or circumstance that requires minimal acute treatment or further evaluation. An example would be a patient involved in a low speed MVC complaining of neck pain, and neurologically intact. MCI designation- “Green” / “Minimal”

CHARLIE A patient condition or circumstance that requires moderate acute treatment or stabilization and further evaluation. An example would be a patient with a moderate asthmatic exacerbation with a slightly decreased O2 saturation requiring nebulized beta agonists. MCI designation- “Yellow” / “Delayed”

DELTA A patient condition or circumstance that requires immediate acute treatment and stabilization and further evaluation. An example would be a hypotensive patient with ECG evidence of a STEMI. MCI designation- “Red” / ”Immediate”

ECHO A patient condition or circumstance that requires immediate resuscitation and life sustaining measures. An example would be any patient with resuscitative efforts in progress. MCI designation- “Black” / “Expectant”

Suspected Child Abuse and Reporting

Suspected Child Abuse – Recognition and Reporting

Children are at risk of abuse due to physical, sexual, emotional maltreatment or neglect. All are harmful to their physical and emotional development and all require intervention. Under the Child Abuse Prevention and Treatment Act (CAPTA), child abuse and neglect means, at a minimum, "Any recent act, or failure to act, on the part of a parent or caretaker, which results in death, serious physical or emotional harm, sexual abuse, or exploitation, or an act or failure to act which presents an imminent risk of serious harm." By Texas State law, all healthcare providers are obligated to report cases of suspected child abuse or neglect to either the local law enforcement agency or the Texas Department of Family and Protective Services (TDFPS).

State of Texas Definitions of Abuse and Neglect

- Abuse includes any of the following acts or omissions by a person:
  - Mental or emotional injury to a child that results in an observable and material impairment in the child's growth, development, or psychological well being;
  - Causing or permitting the child to be in a situation in which the child sustains a mental or emotional injury that results in an observable and material impairment in the child's growth, development, or psychological well being;
  - Physical injury which results in substantial harm to the child, or the genuine threat of substantial harm from physical injury to the child, including an injury which is at variance with the history or explanation given and excluding an accident or reasonable discipline by a parent, guardian, or managing or possessory conservator that does not expose the child to a substantial risk of harm;
  - Failure to make a reasonable effort to prevent an action by another person that results in physical injury that results in substantial harm to the child;
  - Sexual conduct harmful to a child's mental, emotional, or physical welfare;
  - Compelling or encouraging the child to engage in sexual conduct as defined by Section 43.01, Penal Code;
  - Causing, permitting, encouraging, engaging in, or allowing the photographing, filming, or depicting of the child if the person knew or should have known that the resulting photograph, film or depiction of the child is obscene or pornographic, as defined by the Penal Code;
  - The current use by a person of a controlled substance, as defined by the Health and Safety Code, in a manner or to the extent that the use results in physical, mental, or emotional injury to the child or
  - Causing, expressly permitting, or encouraging a child to use a controlled substance.
- Neglect includes any of the following acts or omissions by a person:
  - The leaving of a child in a situation where the child would be exposed to a substantial risk of physical or mental harm, without arranging for necessary care for the child, and the demonstration of an intent not to return by a parent, guardian, or managing or possessory conservator of the child;
  - Placing a child in, or failing to remove a child from, a situation that a reasonable person would realize requires judgment or actions beyond the child's level of maturity, physical condition, or mental abilities and that results in bodily injury or substantial risk of immediate harm to the child
  - Failure to seek, obtain, or follow through with medical care for a child, with the failure resulting in or presenting a substantial risk of death, disfigurement, or

bodily injury or with the failure resulting in an observable and material impairment to the growth, development, or functioning of the child;
  - The failure to provide a child with food, clothing, or shelter necessary to sustain life or health of the child, excluding failure caused primarily by financial inability unless relief services have been offered and refused; or,
  - Placing a child in, or failure to remove a child from, a situation in which the child would be exposed to a substantial risk of sexual conduct harmful to the child; or,
  - The failure by the person responsible for the child's care, custody, or welfare to permit the child to return to the child's home without arranging for the necessary care for the child after the child has been absent from the home for any reason, including having been in residential placement or having run away.

Who Must Report / Circumstances

- Any person;
  - When they have cause to believe that a child's physical or mental health or welfare has been adversely affected by abuse or neglect;
  - Professionals, including teachers, nurses, doctors, day-care employees, juvenile probation officers, juvenile detention or correctional officers, and employees of a clinic or health care facility that provides reproductive services.
  - If a professional has cause to believe that a child has been abused or neglected or may be abused or neglected or that a child is a victim of an offense under Section 21.11, Penal Code.

Privileged Communications/Confidentiality of Records:

- The requirement to report under this section applies without exception to an individual whose personal communications may otherwise be privileged, including an attorney, a member of the clergy, a medical practitioner, a social worker, a mental health professional, and an employee of a clinic or health care facility that provides reproductive services.

When Child Abuse or Neglect is Suspected:

- Anyone having cause to believe that a child's physical or mental health or welfare has been or may be adversely affected by abuse or neglect MUST report the case immediately to a state or local law enforcement agency or the Texas Department of Family and Protective Services (TDFPS).
- Current law requires that professionals such as teachers, doctors, nurses, or child daycare workers must make a verbal report within 48 hours. Failure to report suspected child abuse or neglect is a misdemeanor punishable by imprisonment of up to 180 days and/or a fine of up to $2000.

EMS reporting of suspected child abuse can be accomplished by only one of two methods

- Reporting it directly to law enforcement (not hospital security) either on scene or at the hospital

OR

- Directly contacting the 24 hour TDFPS Family Violence Hotline at 1-800- 252-5400
  - The report of child abuse or neglect is confidential and immune from civil or criminal liability as long as the report was made "in good faith" and "without malice"
  - "In good faith" means that the person making the report took reasonable steps to learn facts that were readily available and at hand.

- "Without malice" means that the person did not intend to injure or violate the rights of another person.
- Provided the report was made "in good faith" and "without malice" the Provider will be immune from liability if asked to participate in any judicial proceedings that may result from the report.

Patient or Scene Presentation:

- The patient may present with patterned burns or injuries suggesting intentional infliction
  - Injuries in various stages of healing (old bruises, etc.)
  - Injuries scattered over multiple areas of the body
  - Fractures or injuries inconsistent with stated cause of injury
  - The patient, parent, or caregiver responding inappropriately to the situation
  - Malnutrition or extreme lack of cleanliness of the patient or environment may indicate neglect
  - Signs of increased intracranial pressure without a readily explainable cause (fever, head trauma, etc.)

Procedures for Dealing with Suspected Abuse Patients:

- Stabilize and treat all injuries accordingly
- Immediately request law enforcement assistance
- Do not initiate a report to law enforcement or social services in front of the patient, parent, or caregiver
- If sexual abuse is suspected, discourage the patient from washing
- If patient, parent, or caregivers are hostile, immediately request law enforcement assistance
- Do not confront or become hostile to the parent or caregiver.
- Document
  - Verbatim (in quotation marks), all statements by the patient, the parent, or caregiver, including statements made about the manner of the injuries.
  - Document any abnormal behavior of the patient, parent, or caregiver.
  - Document the condition of the environment and other residents present.
  - Document in the PCR who received the report of suspected abuse or neglect
    - If reporting is done after PCR completion, an addendum should be written and attached with reporting date, time, who reported to, etc. This will serve to protect the Provider.
- Once a determination of abuse or suspected abuse has been made, notify the appropriate EMS Commander or Designated Medical Officer to provide support for the completion of reporting regulations and processes

Vital Signs Parameters

To ensure consistency in the assessment and treatment of patients that may be suffering circulatory system problems, the following definitions will apply:

Tachycardia
Resting heart rate greater than 100 bpm in adults

Bradycardia
Resting heart rate less than 60 bpm in adults
A child's heart rate should be evaluated based on age and condition. The heart rate of an anxious, sick, or injured child should be rapid. A heart rate less than 60 bpm coupled with signs of poor perfusion in children <8 years of age is an ominous sign.

Hypertension
Consistent resting blood pressure greater than or equal to 140/90 mmHg in adults

Hypotension

Consistent resting blood pressure (less than) < 90/60 mmHg (or Systolic BP < 90mmHg) in adults with associated signs and symptoms of hypoperfusion.

The goal in treating patients suffering from non-compressible bleeding is to maintain a systolic BP of 70 mmHg. This is referred to as permissive hypotension.

Trauma Activation Criteria: "Traumatic injury with signs of shock". The need to rapidly make a determination should be based on signs of hypoperfusion as evidenced by:

- Skin color and condition, **and**;
- Pulse rate and location, **and**;
- Capillary refill, **and**;
- Blood pressure

The blood pressure ATCEMS System will use to validate a "Trauma Activation" decision in an Adult will be a systolic blood pressure of < 90 mmHg.

BP of < 70mmHg + (age in years x 2), with associated signs and symptoms is considered hypotensive in a child.

Hyperglycemic

Blood Glucose level of > 300 mg/dl.

Hypoglycemic

Blood Glucose level of < 50 mg/dl with signs of Altered Mental Status.

Drug Formulary

Version 020415 (MD 14-09)

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Acetaminophen (APAP) (Tylenol)

Class ..... Analgesic, Antipyretic.

Action ..... Equivalent to aspirin in both analgesic and antipyretic effects. Unlike aspirin, acetaminophen has little effect on platelet function, no effect on homeostasis, and is not known to produce gastric bleeding. Acetaminophen is not an NSAID, as it has no anti-inflammatory properties. Its function was largely a mystery until the early 1990's when it was found that it acted on a variant of cyclooxygenase called COX3 that is only expressed in the central nervous system. Because it does not work on COX1 and COX2 (like ASA) it does not cause the downstream effects on platelets or the immune system.

Pharmacokinetics ..... Absorption is rapid, peak 1-2h, duration 3-4h, ½life 1-3h. APAP is processed in the Liver.

Contraindications ..... Use in caution with children afflicted with arthritic or rheumatoid conditions. Use in caution with known thrombocytopenia and/or Liver Disease

Adverse effects ..... N/V, abdominal pain,

Indications ..... Fever with or without seizures **or** Pain.

Dosing ..... **Per Protocols: M-09, M-16, PM-03, PM-06, PM-07**

Clinical Reference: CR - 27

Adenosine

Class ..... Antidysrhythmic

Action ..... Slows AV node conduction, interrupts reentry pathways. Adenosine works in a variety of receptors grouped into a group called P1 receptors. The true mechanism is somewhat unclear. Adenosine works through the activation of cAMP and coupled G-proteins to cause its cardiac effects.

Pharmacokinetics ..... Immediate onset and peak, half-life 10s.

Contraindications ..... Known hypersensitivity. Sick Sinus Syndrome. Second or third degree AV block. Use with caution in patients with severe asthma.

Adverse effects ..... Flushing, CP, HA, N/V, hypotension

Indications ..... Symptomatic (poor perfusion) narrow complex tachycardia w/ pulse

Dosing ..... **Per Protocols: C-04, PC-02**

Albuterol

Class ..... Sympathomimetic Bronchodilator

Action ..... Beta2 adrenergic. Smooth muscle relaxant. Minimal Beta1 effects.

Pharmacokinetics ..... Onset 5-15m, peak 1-1.5h, duration 3-6h, half-life 3h.

Contraindications ..... Known hypersensitivity.

Adverse effects ..... Tachycardia, palpitations, peripheral vasodilation, tremors, HA, sore throat, dry mouth, PVCs, N/V.

Indications ..... Wheezing due to bronchospasm

Dosing ..... **Per Protocols: M-02, PM-01, PR-03, R-04, SO-01, T-04**

Clinical Standard CS-20

Amiodarone

Class ..... Antidysrhythmic

Action ..... Prolongs the duration of the action potential and refractory period of all Cardiac fibers. Depresses the Phase 0 slope by causing a sodium blockade. Causes a Beta block as well as a weak calcium channel blockade. Therefore it decreases the SA nodes rate of firing, suppresses automaticity, interrupts reentrant pathways and prolongs PR, QRS and QT intervals. Relaxes vascular smooth muscle, decreases peripheral vascular resistance, and increases coronary contractility.

Pharmacokinetics ..... Rapid onset, serum concentrations drop to 10% w/in 30-45 minutes.

Contraindications ..... Cardiogenic shock, bradycardia, second/third degree block

Adverse effects ..... Vasodilation (usually not associated with decreased cardiac output secondary to the negative inotropic effects), hypotension, bradycardia, AV block, increased QT interval, V-Tach

Indications ..... Ventricular Arrhythmias or Wide Complex Tachycardia with or without a pulse

Dosing ..... **Per Protocols: C-05, CA-03, PC-03, PCA-03**

Clinical References: CR-01, CR-02, CR-19

Aspirin

Class ..... Analgesic, Antipyretic, NSAID, platelet inhibitor

Action ..... Inhibits the formation of prostaglandins associated with pain, fever, and inflammation. Inhibits platelet aggregation by acetylating cyclooxygenase permanently disabling it so that it cannot synthesize prostaglandins and Thromboxanes. Since Thromboxane A2 is important in clotting its absence does not allow blood to clot effectively.

Pharmacokinetics ..... Onset 5-30m, peak in 15m-2h, duration is 1-4h.

Contraindications ..... Allergy, ulcer, GI bleeding

Precaution ..... Patients with known ASA or NSAIDs sensitive Asthma (defer to OLMC)

Adverse effects ..... N/V, diarrhea, heartburn, GI bleeding

Indications ..... Cardiac type Chest Pain

Dosing ..... **Per Protocol: C-01**

Atropine Sulfate

Class ..... Parasympatholytic

Action ..... Competitive antagonist that selectively blocks all muscarinic responses to acetylcholine. Blocks vagal impulses, thereby increasing SA node discharge, thereby enhancing AV conduction and cardiac output. Potent anti-secretory effects caused by the blocking of acetylcholine at the muscarinic site. Atropine is also useful in the treatment of the symptoms associated with nerve agent poisoning.

Pharmacokinetics ..... Rapid onset, peak in 2-4m IV, half-life 2-3h.

Contraindications ..... A-Fib, A-Flutter, second degree type II or third degree block. Tachycardia, glaucoma. Use with caution in suspected AMI.

Adverse effects ..... Pupil dilation, tachycardia, V-Tach, V-Fib, HA, dry mouth

Indications ..... Bradycardia and Organophosphate poisoning

Dosing ..... **Per Protocols: C-02, M-14, PC-01**
Per Clinical Procedure: CP-24
Per Clinical Reference: CR-38

Calcium Chloride

Class ..... Inotropic Agent (electrolyte)

Action ..... Replaces elemental calcium, which is essential for regulating excitation threshold of nerves and muscles. Calcium is also essential for blood clotting mechanisms, maintenance of renal function, and bone tissues. Calcium increases myocardial contractile force and ventricular automaticity.

Additionally serves as an antidote for magnesium sulfate and calcium channel blocker toxicity. Calcium chloride has three times as much elemental calcium than calcium gluconate.

Pharmacokinetics ..... Onset and peak are immediate

Contraindications ..... V-Fib, renal/cardiac insufficiency, patients taking digitalis, hypercalcemia

Adverse effects ..... Arrhythmias including bradycardia or cardiac arrest, Syncope, N/V, Hypotension, Necrosis with extravasation. Calcium chloride will precipitate when used in conjunction with sodium bicarbonate, Toxicity with digitalis, and may antagonize the effects of calcium channel blockers.

Indications ..... Calcium channel blocker toxicity/overdose, Acute hyperkalemia, Acute hypocalcemia, Acute hypermagnesemia

Dosing ..... **Per Protocols: C-02, CA-02, CA-03, CA-06, M-15**

Clinical References: CR-20

Chlorohexadine Gluconate

Class ..... skin antiseptic

Action ..... Disinfect/clean skin with an antiseptic that contains a minimum of a 2% chlorhexidine-based preparation before sharp appliance insertion.

Pharmacokinetics ..... Found to possess a high level of antibacterial activity, low mammalian toxicity and a strong affinity for binding to the skin. The antimicrobial action of CHG is attributed to the disruption of the microbial cell membrane and precipitation of cell contents. Provides residual effect up to 2 days

Contraindications ..... None for System use.

Precaution ..... Allow the antiseptic to remain on the site and to air dry before catheter insertion, approximately 30 seconds. Chlorohexidine is a skin antiseptic and is not approved for use on environmental surfaces.

Adverse effects ..... Handle with care. In case of eye contact, immediately flush eye with plenty of water, if irritation persists, seek medical attention.

Indications ..... Necessary skin preparation prior to the application of a sharp appliance including, but not limited to venous catheters, intraosseous infusion needles, lancets, and the delivery of medications or immunizations through syringes either intramuscular, dermal, or subcutaneous.

Dosing ..... **Per Clinical Procedures: CP-05, CP-10, CP-17, CP-28, CP-34, CP-37, CP-38, CP-61**

Dextrose (D10W)

Class ..... Carbohydrate. Dextrose (aka. glucose) is one of the basic building blocks of all sugars. Glucose is a monomer and is therefore readily processed in the blood. Through glycolysis glucose is turned into pyruvate giving off a small amount of chemical energy (ATP). Pyruvate is further processed through the Citric Acid Cycle (Kreb's Cycle) yielding even more energy (GTP, FADH2 and NADH) and CO2. The GTP, FADH2 and NADH are then converted into a large amount of ATP through the use of a specialized cell membrane and the ability of Oxygen to receive extra protons and carbon to form water and CO2. Insulin turns excess glucose into glycogen when blood sugars are high. Glucose is a large molecule that forms a ring, this structure is incapable of being absorbed into a cell without a mediator (insulin) and therefore increases damage to epithelium as it floats through the blood stream. It also causes an osmotic pressure as concentrations vary across membranes. The pressure is less with D5 and D10 therefore they are used in pediatrics.

Action ..... Principal form of glucose used by the body

Pharmacokinetics ..... Rapid absorption in bloodstream

Contraindications ..... Use with caution in patients with suspected increased ICP.

Adverse effects ..... Patients may complain of warmth, pain, or burning at the injection site. Extravasation causes necrosis.

Indications ..... Cardiac Arrest or altered mentation with Glucose level < 50 or Newly Born with heart rate < 60

Dosing ..... **Per Protocols: CA-02, M-03, OB-03, PC-01, PM-02, PCA-02**

Clinical Reference: CR-21

Clinical Standard: CS-20

Diltiazem

Class ..... Diltiazem hydrochloride is a calcium ion cellular influx inhibitor (slow channel blocker or calcium antagonist).

Action..... Nondihydropyridine calcium-channel blocker: Inhibits extracellular calcium ion influx across membranes of myocardial cells and vascular smooth muscle cells, resulting in inhibition of cardiac and vascular smooth muscle contraction and thereby dilating main coronary and systemic arteries; no effect on serum calcium concentrations; substantial inhibitory effects on cardiac conduction system, acting principally at AV node, with some effects at sinus node

Pharmacokinetics ..... Diltiazem hydrochloride is extensively metabolized by the liver and excreted by the kidneys and in bile.

Contraindications ..... Diltiazem is contraindicated in (1) patients with sick sinus syndrome except in the presence of a functioning ventricular pacemaker, (2) patients with second- or third-degree AV block except in the presence of a functioning ventricular pacemaker, (3) patients with hypotension (less than 90 mm Hg systolic), (4) patients who have demonstrated hypersensitivity to the drug, and (5) patients with acute myocardial infarction and pulmonary congestion.

Precaution ..... Cardiac Conduction: Diltiazem prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction

Adverse effects ..... Headache, constipation, rash, nausea, flushing, edema, drowsiness, low blood pressure, and dizziness.

Indications..... Atrial Fibrillation with RVR, Paroxysmal Supraventricular Tachycardia

Dosing..... **Per Protocol C-03, C-04**

Diphenhydramine

Class ..... Antihistamine, Ethanolamine, Anticholinergic

Action ..... Diphenhydramine blocks the effects of Histamine (H1 histamine) on the H1 receptor site through a competitive competition for the peripheral H1 site. When diphenhydramine is bound the H1 site cannot be stimulated preventing the effects of histamines (swelling, etc…). As an H1 blocker diphenhydramine blocks the effects of H1 on its receptor in the cortex as well this causes a change in the cortex neural potassium channels causing neurons in the cortex to have a higher threshold to depolarize. This results in an increase in sedation as a result of the H1 block. As an antihistamine, diphenhydramine one of the most effective antihistamines.

Pharmacokinetics ..... Onset of 15m IV, peak 1-4h, ½ life 2-10h.

Contraindications ..... Known allergy.

Adverse effects ..... Potent anticholinergic agent. Mydriasis, Photophobia, ataxia, tachycardia

Indications ..... Hives/Rash or Adult dystonic reaction

Dosing ..... **Per Protocols: M-02, M-05, PM-01, PM-09**

Enalaprilat (Vasotec)

Class ..... Enalaprilat (Enalapril's injectable form) injection is a sterile aqueous solution for intravenous administration. Enalaprilat is an angiotensin converting enzyme (ACE) inhibitor.

Action ..... Intravenous enalaprilat, or oral enalapril, after hydrolysis to enalaprilat, inhibits ACE in human subjects and animals. ACE is a peptidyl dipeptidase that catalyzes the conversion of angiotensin I to the vasoconstrictor substance, angiotensin II. Angiotensin II also stimulates aldosterone secretion by the adrenal cortex. Inhibition of ACE results in decreased plasma angiotensin II, which leads to decreased vasopressor activity and to decreased aldosterone secretion.

Pharmacokinetics ..... A clinical response is usually seen within 15 minutes. Peak effects after the first dose may not occur for up to four hours after dosing, although most of the effect is usually apparent within the first hour. This drug is known to be substantially excreted by the kidney.

Contraindications ..... Enalaprilat injection is contraindicated in patients who are hypersensitive to any component of this product and in patients with a history of angioedema related to previous treatment with an angiotensin converting enzyme inhibitor and in patients with hereditary, idiopathic angioedema, known pregnancy or hypotension.

Precaution ..... The risk of toxic reactions of this drug may be greater in patients with impaired renal function.

Adverse effects ..... Hypertensive patients at risk of excessive hypotension include those with the following concurrent conditions or characteristics: unstable heart failure, hyponatremia, high dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology.

Indications ..... Enalaprilat injection is indicated for the treatment of Hypertension in CHF.

Dosing ..... **Per Protocol: R-03**

Epinephrine

Class ..... Sympathomimetic

Action ..... Naturally occurring catecholamine obtained form animal adrenal glands. Acts on alpha and beta adrenergic receptors. The most potent alpha agonist. Beta1: Strengthens myocardial contraction, increase sys BP (may decrease dia BP), increases HR and cardiac output. Beta2: Dilates bronchial smooth muscle and inhibits mucous secretion. Alpha: Constricts bronchiole arterioles, inhibits histamine release, constricts arterioles in the skin, mucous membranes, and kidneys but dilates those in the skeletal muscle. Action is through a natural hormonal mechanism.

Pharmacokinetics ..... Onset<2m IV, 3-10m SQ. Peak 5m IV, 20m SQ. Duration 5-10m IV, 20-30m SQ.

Contraindications ..... Tachydysrhythmias, coronary artery disease.

Adverse effects ..... HA, N/V, tachydysrhythmias, AMI, diaphoresis, anxiety, palpitations.

Indications ..... Allergic Reaction/Anaphylaxis, Reactive Airway Disease, PEDI Bradycardia, Cardiac Resuscitation

Dosing ..... **Per Protocols: CA-02, CA-03, M-02, PC-01, PM-01, PM-09, PR-03, PCA-02, PCA-03, R-04, SO-01**

Clinical Procedure: CP-24

Clinical References: CR-4, CR-23

Clinical Standard CS-20

Fentanyl Citrate

Class ..... Narcotic analgesic

Action ..... The principal actions of therapeutic value are analgesia and sedation.

Pharmacokinetics ..... Opioid (narcotic, CNS-acting) analgesics are derivatives of opium. These drugs modify the perception of pain and provide a sense of euphoria by binding to specific opiate receptors throughout the central nervous system. Many of the characteristics of particular opioids relate to the receptor to which they bind. Fentanyl is classified as a full agonists and binds to mu receptor sites, blocks pain impulses, and produces maximum pain control. Onset immediate, peak 3-5m, duration 30-60m.

Contraindications ..... Fentanyl is not indicated for MAOI use, asthma, myasthenia gravis, evidence of hypoperfusion.

Adverse effects ..... Fentanyl may cause muscle rigidity, particularly involving the muscles of respiration. In addition, skeletal muscle movements of various groups in the extremities, neck and external eye have been reported during induction of anesthesia with fentanyl; these reported movements have, on rare occasions, been strong enough to pose patient management problems. This effect is related to the dose and speed of injection and its incidence can be reduced by slower administration and lower doses titrated to effect. As with other narcotic analgesics, the most common serious adverse reactions reported to occur with fentanyl are respiratory depression, apnea, rigidity, and bradycardia; if these remain untreated, respiratory arrest, circulatory depression or cardiac arrest could occur. Other adverse reactions that have been reported are hypertension, hypotension, dizziness, blurred vision, nausea, emesis, laryngospasm, and diaphoresis.

Indications ..... Acute pain management

Dosing ..... **Per Protocols: M – 16, C – 01, T – 02, SO - 11, PM – 06, PT - 01**

Clinical Reference: CR – 35 (Adult) & CR – 36 (Pedi)

Clinical Standard: CS - 37

Hydroxocobalamin (Vitamin B_{12})

Class ..... Vitamin

Action ..... Hydroxocobalamin binds with Cyanide to form nontoxic cyanocobalamin, which is then excreted in the urine.

Pharmacokinetics ..... The predominant mean half-life of free and total cobalamins-(III) was found to be approximately 26 to 31 hours at both the 5 g and 10 g dose level. The mean total amount of cobalamins-(III) excreted in urine during the collection period of 72 hours was about 60% of a 5 g dose and about 50% of a 10 g dose of hydroxocobalamin. Overall, the total urinary excretion was calculated to be at least 60 to 70% of the administered dose. The majority of the urinary excretion occurred during the first 24 hours, but red-colored urine was observed for up to 35 days following the intravenous infusion.

Contraindications ..... Known anaphylactic reactions to hydroxocobalamin or cyanocobalamin

Adverse effects ..... Anaphylaxis, chest tightness, edema, urticaria, pruritus, dyspnea, rash, and angioneurotic edema. Substantial increases in blood pressure may occur following CYANOKIT® therapy.

Indications ..... For the treatment of known or suspected cyanide poisoning

Dosing ..... **Per Protocols: M – 21, PM - 11**

Clinical Procedure CP - 37

Glucagon

Class ..... Hormone

Action ..... Causes a breakdown of stored blood glycogen to glucose and inhibits glycogen synthesis. Glucagons acts by binding to glucagon receptor sites and stimulating a secondary messenger through the increase of adenylate cyclase. Beta stimulation causes an increase in the adenylate cyclase. Therefore glucagon has been known to have beta like effects just as Beta drugs such as Epinephrine are known to stimulate Glycogenolysis in the liver.

Pharmacokinetics ..... Onset 5-20m, peak 30m, duration 1-1.5h. ½ life30m.

Contraindications ..... Not efficacious in poorly nourished individuals as they have no glycogen stores.

Adverse effects ..... N/V, HA

Indications ..... Hypoglycemia < 50 if unable to obtain IV access for D10W

Dosing ..... **Per Protocols: C-02, CA-02, M-03, M-15, PC-01, PM-02, PM-09, PCA-02**

Haloperidol

Class ..... Antipsychotic

Action ..... The precise mechanism of action has not been clearly established.

Pharmacokinetics ..... This drug is known to be substantially excreted by the kidney.

Contraindications ..... Severe toxic central nervous system depression or comatose states from any cause and in individuals who are hypersensitive to this drug or have Parkinson's disease.

Precaution ..... Elderly Patients with Dementia-Related Psychosis.

Adverse effects ..... Tachycardia, hypotension, and hypertension have been reported. QT prolongation and/or ventricular arrhythmias have also been reported, in addition to ECG pattern changes compatible with the polymorphous configuration of torsade de pointes, and may occur more frequently with high doses and in predisposed patients. Symptoms of dystonia, prolonged abnormal contractions of muscle groups, may occur in susceptible individuals during the first few days of treatment. Dystonic symptoms include: spasm of the neck muscles, sometimes progressing to tightness of the throat, swallowing difficulty, difficulty breathing, and/or protrusion of the tongue. While these symptoms can occur at low doses, they occur more frequently and with greater severity with high potency and at higher doses of first generation antipsychotic drugs. An elevated risk of acute dystonia is observed in males and younger age groups. The risk of toxic reactions of this drug may be greater in patients with impaired renal function. In the event of an EPS (dystonic type reaction) Diphenhydramine should be used.

Indications ..... Haloperidol is used to treat certain mental/mood disorders (e.g., schizophrenia, schizoaffective disorders). It can also help prevent suicide in people who are likely to harm themselves. It also reduces aggression and the desire to hurt others. It can decrease negative thoughts and hallucinations. Haloperidol can also be used to treat uncontrolled movements and outbursts of words/sounds related to Tourettes disorder. Haloperidol is also used for severe behavior problems in hyperactive children when other treatments or medications have not worked. Haloperidol is a psychiatric medication (antipsychotic-type) that works by helping to restore the balance of certain natural substances in the brain (neurotransmitters).

Dosing ..... **Per Protocol: M-05**

Hurricaine/Cetacaine Spray

Class ..... Topical anesthetic; Contains 14-20% Benzocaine

Action ..... Blocks conduction of impulses at the sensory nerve endings.

Pharmacokinetics ..... Benzocaine is an ester, a compound made from the organic acid PABA (para-aminobenzoic acid) and ethanol.

Pain is caused by the stimulation of nerve endings. When the nerve endings are stimulated, sodium enters the nerve ending, which causes an electrical signal to build up in the nerve. Once the electrical signal becomes big enough, it is able to travel to the brain, which then interprets this as pain.

Esters of PABA work as a chemical barrier, stopping the sodium from being able to enter the nerve ending.

Contraindications ..... Known sensitivity to Benzocaine anesthetics.

Adverse effects ..... Benzocaine is a well-known cause of methemoglobinemia. Because it may be used in topical creams with a concentration as much as 20%, it is not difficult to administer a dose sufficient to cause this problem.

Indications ..... To facilitate nasal intubation attempts in patients with a gag reflex.

Dosing ..... **Per Clinical Procedure: CP-44**

Ibuprofen

Class ..... Non-Steroidal Anti-Inflammatory Drug (NSAID)

Action ..... Ibuprofen possesses analgesic and antipyretic activities. Its mode of action, like that of other NSAIDs, is not completely understood, but may be related to prostaglandin synthetase inhibition, by blocking the enzyme in your body that makes prostaglandins. Decreasing prostaglandins helps to reduce pain, swelling, and fever.

Pharmacokinetics ..... Ibuprofen is rapidly absorbed. Peak serum ibuprofen levels are generally attained one to two hours after administration. Ibuprofen is rapidly metabolized and eliminated in the urine. The excretion of ibuprofen is virtually complete 24 hours after the last dose. The serum half-life is 1.8 to 2.0 hours.

Contraindications ..... In patients with known hypersensitivity and should not be given to patients who have experienced asthma, urticaria, or allergic-type reactions after taking aspirin or other NSAIDs. Severe, rarely fatal, anaphylactic-like reactions to NSAIDs have been reported in such patients. Contraindicated for the treatment of peri-operative pain in the setting of coronary artery bypass graft (CABG) surgery.

Precaution ..... Pregnancy, aspirin-sensitive asthma, coagulation disorders or patients receiving anticoagulants should be carefully monitored.

Adverse effects ..... Heart attack, stroke, high blood pressure, heart failure from body swelling (fluid retention), kidney problems including kidney failure, bleeding and ulcers in the stomach and intestine, low red blood cells (anemia), life-threatening skin reactions, life-threatening allergic reactions, liver problems including liver failure, asthma attacks in people who have asthma.

Indications ..... Ibuprofen is a non-steroidal anti-inflammatory drug (NSAID), which relieves pain and swelling (inflammation). It is used to treat headaches, muscle aches, backaches, dental pain, menstrual cramps, arthritis, or athletic injuries. This medication is also used to reduce fever and to relieve minor aches and pains due to the common cold or flu.

Dosing ..... **Per Protocols: M-09, M-16**

Ipratropium Bromide (Atrovent)

Class ..... Parasympatholytic Bronchodilator

Action ..... Anticholinergic agent, chemically closely related to atropine and has the same actions as Atropine. Acts directly on the smooth muscle and decreases secretions. Reduces the vagally mediated reflex bronchospasm caused by inhaled irritants.

Pharmacokinetics ..... 10% of inhaled dose reaches lower airway, 0.5% reaches systemic distribution. Peak 1.5-2h, duration 4-6h, ½ life 1.5-2h.

Contraindications ..... Narrow-angle Glaucoma, Hypersensitivity to Atropine

Adverse effects ..... Dry mouth, HA, cough, dries secretions

Indications ..... Obstructive Airway Disease, Reactive Airway Disease

Dosing ..... **Per Protocols: PR-03, R-04, T-04**

Lidocaine

Class ..... Antidysrhythmic, Sodium channel blocker

Action ..... Raises the threshold for ventricular contractions and lowers the threshold for defibrillation and cardioversion. Suppresses automaticity in the His-purkinje system and by elevating the electrical stimulation threshold of ventricular contractions. This is accomplished by blocking the rapid influx of Na+ during the initial phase of depolarization. Typically shortens the action potential and the refractory period secondary to a blockade of sodium channels that usually (in procainamide's blockade) continue to function normally through phase 2 of the action potential. Lidocaine functions well in hyperkalemic and acidotic states therefore it works well on ischemic tissues.

Pharmacokinetics ..... Onset 3m, peak 5-7m, duration 10-20m, ½ life 1.5-2h.

Contraindications ..... CHF, shock, use caution in the elderly.

Adverse effects ..... Seizures, slurred speech, AMS

Indications ..... Pain Management for IO Infusion, Cardiac Arrest and Post Resuscitation Care

Dosing ..... **Per Protocols: C-05, CA-03, CA-06, M-08, PC-03, PCA-03, U-02**

Clinical Procedures: CP-24, CP-38

Clinical References: CR-05, CR-25

Magnesium Sulfate 50%

Class ..... Electrolyte

Action ..... Molecularly Mg+ is very similar to Ca because it has the same electron valence. Because of this it chemically very similarly to Ca+ and in some reactions in the body. Ca+ is significantly larger than Mg+ therefore Mg+ does not adequately replace it in cases that are not purely chemical. Because of these qualities Mg+ can prevent Ca+ from binding to Troponin and prevent muscles from contracting as described in the action for "Calcium Gluconate". Because of its extremely positive charge it also blocks neuromuscular transmission by changing the electric potentials threshold.

Pharmacokinetics ..... Onset immediate, duration 30m

Contraindications ..... Renal disease, AV block, previous myocardial damage, hypotension.

Adverse effects ..... Hypotension, asystole, cardiac arrest, respiratory/CNS depression, flushing, sweating.

Indications ..... Obstetrical Emergencies/ Seizures (adult only), Reactive Airway Disease, Toxic Exposure (Hydrofluoric Acid), Pulseless Arrest, Tachycardia w/ pulse (adults only), Torsades des Pointes.

Dosing ..... **Per Protocols: C-05, CA-03, CA-06, OB-02, PR-03, PCA-03, PC-03, R-04**

Clinical Reference: CR-26

When the Protocols call for an infusion over time: Place the M/S dose into 50ml/NS and infuse over the time indicated per protocol.

Methylprednisolone (Solu-Medrol)

Class ..... Glucocorticosteroid

Action ..... Adrenal Corticosteroid with fewer sodium and water retention effects than hydrocortisone. Methylprednisolone alters the body's immune response. Swelling is reduced because it prevents the white blood cells traveling to the area.

Pharmacokinetics ..... ½ life of 2.5-3.5h.

Contraindications ..... None for anaphylaxis.

Adverse effects ..... Peptic ulcer, hyperglycemia, hypokalemia, impaired ability to fight infection, in the prolonged use the side effects are so numerous they are the subject of several books.

Indications ..... Allergic Reaction/Anaphylaxis, Reactive Airway Disease

Dosing ..... **Per Protocols: M-02, PM-01, PR-03, R-04, SO-01**

Midazolam

Class ..... Sedative, Benzodiazepine

Action ..... As a Benzodiazepine this drug functions on GABA similarly to the action of "Diazepam". Midazolam is a short-acting muscle-relaxant, anticonvulsant, in addition to these effects Midazolam also has anterograde amnestic effects, it is therefore preferred prior to cardioversion.

Pharmacokinetics ..... Onset 3-5m IV, 6-14 IN, peak 20-60, duration < 2h, ½ life 1-4h.

Contraindications ..... Shock, acute narrow glaucoma, coma

Adverse effects ..... Resp. depression, hypotension, bradycardia, HA, N/V

Indications ..... Seizures, Violent Patient/Chemical Sedation, Sedation for Electrical therapy, Hyperthermia (Environmental) and Induced Hypothermia.

Dosing ..... **Per Protocols: CA – 04, C – 02, C – 03, C – 04, C - 05, M – 05, M – 07, M – 10, M – 15, M – 17, PC – 02, PC – 03, PM – 07, PM - 09**

Clinical References: CR – 35 (Adult) & CR – 36 (Pedi)

Clinical Standard: CS - 37

Naloxone (Narcan)

Class ..... Narcotic Antagonist

Action ..... Competitive antagonist for opioids competing for opiate receptor sites in the brain. Displaces narcotic molecules from opiate receptors through this competition. Higher doses are needed to overcome overdoses of opiates that have a higher affinity for the opiate receptor in the brain.

Pharmacokinetics ..... Onset <2m, peak <2m, duration 2-20m, ½ life 60-90m.

Contraindications ..... Neonates with narcotic-addicted mothers.

Adverse effects ..... Withdrawal symptoms.

Indications ..... narcotic overdose

Dosing ..... **Per Protocols: M-15, OB-03, PM-09**

Per Clinical Procedure: CP-24

Clinical Standard CS-20

Nitroglycerin

Class ..... Nitrate

Action ..... Potent vasodilator with antianginal, anti-ischemic, and antihypertensive effects. Relaxes vascular smooth muscle by an unknown mechanism. Decreases peripheral vascular resistance, preload, and afterload.

Pharmacokinetics ..... Onset 1-3m SL, 30m transdermal. Peak 5-10m SL. Duration is 20-30m SL, 3-6h transdermal.

Contraindications ..... Hypotension, hypovolemia, severe bradycardia or tachycardia, use of erectile dysfunction drugs within past 24hrs up to 48 hours depending on use of extended release medications.

Adverse effects ..... Hypotension, HA, syncope, tachycardia.

Indications ..... Chest Pain, CHF/Pulmonary Edema

Dosing ..... **Per Protocols: C-01, R-03**

Ondansetron (Zofran)

Class ..... Antiemetic, 5-HT3, receptor antagonist

Action ..... Ondansetron is a selective 5-HT3 receptor antagonist. While its mechanism of action has not been fully characterized, Ondansetron is not a dopamine-receptor antagonist. Serotonin receptors of the 5-HT3 type are present both peripherally on vagal nerve terminals and centrally in the chemoreceptor trigger zone of the area postrema. It is not certain whether Ondansetron's antiemetic action is mediated centrally, peripherally, or in both sites. The released serotonin may stimulate the vagal afferents through the 5-HT3 receptors and initiate the vomiting reflex.

Pharmacokinetics ..... IV/IM Rapid onset (< 10 min.), PO up to approx. 30 min. half-life 3-4 hours

Contraindications ..... If the patient is sensitive to or has ever had an allergic reaction to ondansetron hydrochloride, do not give Zofran. If drugs similar to Zofran (for instance, Anzemet or Kytril) have caused a reaction, Zofran may cause one too. If your patient has phenylketonuria (an excess of the amino acid phenylalanine) Zofran also contains this substance.

Adverse effects ..... Blurred vision or temporary blindness, fever, slow heart rate, trouble breathing, anxiety, agitation, shivering, feeling light-headed or fainting

Indications ..... Nausea and/or Vomiting

Dosing ..... **Per Protocols: M-08, M-13, M-10, PM-05, PM-08**

Oral Glucose

Class ..... Carbohydrate. Dextrose (aka. glucose) is one of the basic building blocks of all sugars. Glucose is a monomer and is therefore readily processed in the blood. Through glycolysis glucose is turned into pyruvate giving off a small amount of chemical energy (ATP). Pyruvate is further processed through the Citric Acid Cycle (Kreb's Cycle) yielding even more energy (GTP, FADH2 and NADH) and CO2. The GTP, FADH2 and NADH are then converted into a large amount of ATP through the use of a specialized cell membrane and the ability of Oxygen to receive extra protons and carbon to form water and CO2.

Action ..... Principal form of glucose used by the body readily absorbed via the digestive tract.

Pharmacokinetics ..... Rapid absorption in bloodstream

Contraindications ..... Patients that are unconscious or unable to control their airway, not recommended for patients < 2 years of age.

Adverse effects ..... Airway compromise during administration

Indications ..... Patients with blood glucose level < 50 with altered mentation and who can control their airway and are able to swallow.

Dosing ..... **Per Protocols: M-03, PM-02**

Clinical Standard CS-20

Neo-Synephrine (phenylephrine)

Class ..... Decongestant (topical)

Action ..... A direct-acting sympathomimetic. Phenylephrine acts on alpha-adrenergic receptors in the nasal mucosa to produce vasoconstriction, resulting in decreased blood flow and decreased nasal congestion.

Pharmacokinetics ..... rapid onset, up to 4 hours duration

Contraindications ..... known hypersensivity to this Medication

Precaution ..... Patients sensitive to other nasal decongestants may be sensitive to this medication also.

Adverse effects ..... Coronary artery disease or Heart disease, including angina or hypertension (condition may be exacerbated due to drug-induced cardiovascular effects)

Indications ..... Epistaxis and Nasal preparation prior to Nasal Tracheal Intubation attempt

Dosing ..... **Per: Protocol M-22**

Clinical Procedure CP-44

Norepinephrine (Levophed)

Class ..... Adrenergic, Catecholamine, Sympathomimetic amine which differs from epinephrine by the absence of a methyl group on the nitrogen atom.

Action ..... LEVOPHED (norepinephrine bitartrate) functions as a peripheral vasoconstrictor (alpha-adrenergic action) and as an inotropic stimulator of the heart and dilator of coronary arteries (beta-adrenergic action).

Pharmacokinetics ..... Onset 1 to 2 minutes

Contraindications ..... Levophed should not be given to patients who are hypotensive from blood volume deficits except as an emergency measure to maintain coronary and cerebral artery perfusion until blood volume replacement therapy can be completed. If Levophed is continuously administered to maintain blood pressure in the absence of blood volume replacement, the following may occur: severe peripheral and visceral vasoconstriction, decreased renal perfusion and urine output, poor systemic blood flow despite “normal” blood pressure, tissue hypoxia, and lactate acidosis. Levophed should also not be given to patients with mesenteric or peripheral vascular thrombosis (because of the risk of increasing ischemia and extending the area of infarction) unless, in the opinion of the attending physician, the administration of Levophed is necessary as a life-saving procedure., tachydysrhythmias, HTN

Warnings..... Levophed should be used with extreme caution in patients receiving monoamine oxidase inhibitors (MAOI) or antidepressants of the triptyline or imipramine types, because severe, prolonged hypertension may result. Levophed Bitartrate contains sodium metabisulfite, a sulfite that may cause allergic-type reactions including anaphylactic symptoms and life-threatening or less severe asthmatic episodes in certain susceptible people. The overall prevalence of sulfite sensitivity in the general population is unknown. Sulfite sensitivity is seen more frequently in asthmatic than in nonasthmatic people.

Adverse effects ..... Tachydysryhthmias, VF, VT, AMI, N/V, HA.

Indications..... For blood pressure control in certain acute hypotensive states myocardial infarction, septicemia, blood transfusion, and drug reactions. And, as an adjunct in the treatment of cardiac arrest and profound hypotension.

Dosing ..... **Per Protocols: CA-04, M-11, T-07**

Clinical References: CR-03

Proparacaine Hydrochloride

Class ..... is a topical anesthetic prepared as a sterile aqueous ophthalmic solution.

Action ..... a rapid acting local anesthetic suitable for ophthalmic use. The onset of anesthesia usually begins within 30 seconds and lasts a relatively short period of time. The main site of anesthetic action is the nerve cell membrane where proparacaine interferes with the large transient increase in the membrane permeability to sodium ions that is internally produced by a slight depolarization of the membrane. As the anesthetic action progressively develops in a nerve, the threshold for electrical stimulation gradually increases and the safety factor for conduction decreases; when this action is sufficiently well developed, block of conduction is produced. The exact mechanism whereby proparacaine and other local anesthetics influence the permeability of the cell membrane is unknown; however, several studies indicate that local anesthetics may limit sodium ion permeability through the lipid layer of the nerve cell membrane. This limitation prevents the fundamental change necessary for the generation of the action potential.

Contraindications ..... patients with known hypersensitivity

Precaution ..... Proparacaine hydrochloride should be used cautiously and sparingly in patients with known allergies, cardiac disease, or hyperthyroidism. The long-term toxicity of proparacaine is unknown, prolonged use may possibly delay wound healing. Although exceedingly rare with ophthalmic application of local anesthetics, it should be borne in mind that systemic toxicity (manifested by central nervous system stimulation followed by depression) may occur.

Adverse effects ..... CNS depression, Allergic reaction

Indications ..... anesthetic used for eye procedures related to eye injury or contamination

Dosing ..... **Per Protocol: M-08**

Pyridoxine

Class ..... Vitamin B6

Action ..... Vitamin B6 acts as a coenzyme necessary for the metabolism of fats, proteins and carbohydrates. It helps with the functioning of the immune and nervous systems and the formation red blood cells. Asthma, diabetes and PMS (premenstrual syndrome) sufferers may benefit from this vitamin, plus it may also lower cholesterol and help prevent heart disease. Along with tryptophan, vitamin B6 is used to produce niacin.

Contraindications ..... **None** in the Toxic Exposure of Hydrazine (Isonicotinic Acid Hydrazide; INH)

Precaution ..... Pyridoxine is safe for most people. In some people, pyridoxine might cause nausea, vomiting, stomach pain, loss of appetite, headache, tingling, sleepiness, and other side effects.

Indications ..... Toxic Exposure of Hydrazine (INH)

Dosing ..... **Per Protocol: SO-07**

Sodium Bicarbonate

Class ..... Electrolyte

Action ..... Short-acting, potent, systemic antacid. Immediately raises the pH of blood plasma by buffering excess hydrogen ions. This occurs because the Na+ (sodium) and the HCO3- (bicarbonate ion) separate in solution. While separate the negative charge on the bicarbonate is able to accept (and will prefer over sodium) hydrogen ions. The HCO3- then becomes H2CO3 which the body will turn into water and CO2. In tricyclic overdoses the Na+ ion is important also in its use to attempt to overcome the sodium blockade that occurs.

Pharmacokinetics ..... Onset immediate, duration 1-2h.

Contraindications ..... None on an indicated condition.

Adverse effects ..... Metabolic alkalosis, hypokalemia, fluid overload.

Indications ..... Overdose, Hyperkalemic Arrest, Neonatal Resuscitation (OLMC), Burns, Crush Injuries

Dosing ..... **Per Protocols: C-05, CA-02, CA-03, CA-06, M-15, PC-01, PCA-02, PM-09, SO-04, SO-11**

Terbutaline Sulfate

Class ..... beta-adrenergic agonist bronchodilator available as a sterile, nonpyrogenic, aqueous solution in vials, for subcutaneous administration.

Action ..... Terbutaline is a beta-adrenergic receptor agonist. In vitro and in vivo pharmacologic studies have demonstrated that terbutaline exerts a preferential effect on beta2-adrenergic receptors. While it is recognized that beta2-adrenergic receptors are the predominant receptors in bronchial smooth muscle, data indicate that there is a population of beta2-receptors in the human heart, existing in a concentration between 10% to 50%. The precise function of these receptors has not been established. Controlled clinical studies have shown that terbutaline relieves bronchospasm in acute and chronic obstructive pulmonary disease by significantly increasing pulmonary flow rates (e.g., an increase of 15% or more in FEV1). After subcutaneous administration of 0.25 mg of terbutaline, a measurable change in expiratory flow rate usually occurs within 5 minutes, and a clinically significant increase in FEV1 occurs within 15 minutes. The maximum effect usually occurs within 30 to 60 minutes, and clinically significant bronchodilator activity may continue for 1.5 to 4 hours. The duration of clinically significant improvement is comparable to that observed with equimilligram doses of epinephrine.

Contraindications ..... Terbutaline sulfate injection is contraindicated in patients known to be hypersensitive to sympathomimetic amines or any component of this drug product.

Precaution ..... Terbutaline, as with all sympathomimetic amines, should be used with caution in patients with cardiovascular disorders, including ischemic heart disease, hypertension, and cardiac arrhythmias; in patients with hyperthyroidism or diabetes mellitus; and in patients who are unusually responsive to sympathomimetic amines or who have convulsive disorders.

Adverse effects ..... Significant changes in systolic and diastolic blood pressure have been seen and could be expected to occur in some patients after use of any beta-adrenergic bronchodilator.Immediate hypersensitivity reactions and exacerbations of bronchospasm have been reported after terbutaline administration.

Indications ..... Respiratory distress in patients > 36 Kg during remote rescue events with significant extraction time and transport delay

Dosing ..... **Per Protocol: SO-01**

Vecuronium Bromide

Class ..... Non-depolarizing neuromuscular blocker

Action ..... The relaxation of skeletal muscles which facilitates endotracheal intubation and mechanical ventilation.

Pharmacokinetics ..... Binds to receptors and prevents acetylcholine (Ach) from stimulating receptors. It competes with Ach for nicotinic receptor binding sites. The blockade is competitive, hence muscle paralysis occurs gradually.

Contraindications ..... None

Adverse effects ..... Prolonged paralysis

Indications ..... To facilitate invasive cooling procedure.

Dosing ..... **Per Protocol: CA-04**

Xylocaine Gel

Class ..... anesthetic

Action ..... stabilizes the neuronal membrane by inhibiting the ionic fluxes required for the initiation and conduction of impulses thereby, effecting local anesthetic action. Local anesthetics of the amide type are thought to act within the sodium channels of the nerve membrane.

Pharmacokinetics ..... After application local anesthesia is achieved within 5 minutes. Duration of anesthesia is approximately 20 - 30 minutes.

Contraindications ..... Lidocaine HCl is contraindicated in patients with a known history of hypersensitivity to local anesthetics of the amide type.

Indications ..... Nasal preparation prior to Nasal Tracheal Intubation attempt

Dosing ..... **Per Clinical Procedure: CP-32, CP44**

Office of the Medical Director System Reference Documents

OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

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~~System PI Committee Structure~~ (Removed 02.04.15 MD 14-09)..... ... ~~OMDR - 21~~
System Registered Organizations.....OMDR - 19
The Office of the Medical Director.....OMDR - 15

ALS Minimum Equipment List
FRO Tier 2 Organizations

Austin-Travis County EMS System

First Response Minimum Equipment Stocking List

The use of Equipment or Supplies not approved by the System Medical Director during patient care is prohibited. Approved items are specified per the Equipment Lists for each System Organization Tier and Credentialing Level, Clinical Standard CS - 30.

EMT- P Credential Levels

BLS Airway Adjuncts: Minimum of all Adult sizes may also have Pedi sizes

- NPA – 1 of each
- OPA – 1 of each
- Water soluble lubricating jelly – 2

Portable Oxygen Delivery System

- Oxygen bottle (may be one of either A, super C, D, or E size) – 1
- Cylinder pressure gauge (brass preferred) – 1
- Adjustable liter flow meter with high pressure port (brass preferred) minimum flow 15 Lpm. – 1
- Oxygen cylinder wrench – 1
- Oxygen administration supplies
  - Nasal cannula – 2
  - Non-rebreathing mask – 2
  - Pediatric Non rebreather – 1
  - Infant face mask – 1

Bandages, Dressings and Splinting

- Latex free band-aids – 5
- Sterile 4x4s – 10
- Non-sterile 4x4s – 25
- Ice Packs - 6
- Trauma dressing – 1
- Occlusive dressing – 1
- Triangular bandages – 3
- Self-adhering gauze bandages (Kerlex or acceptable equivalent) – 3
- Adhesive tape (should be hypoallergenic/latex free when available) – 1 roll
- Padded Short Board Splint –1 and/or 1 Sam Splint
- Padded Medium Board Splint –1 and/or 1 Sam Splint
- Padded Long Board Splint –1
- Kendrick Traction Splint Device (KTD) –1 (per Organization's Primary Response Apparatus)
- Commercially Designed Tourniquet- 2
- Pelvic Binder (Sam Sling) –1 ea size small and large

Spinal Motion Restriction (per Organization's Primary Response Apparatus)

- Long Back Board with straps –1
- Adjustable Adult C-Collar –1
- Adjustable Pedi C-Collar ---1
- Head Blocks –1 package or set

Sterile (Saline Solution or Water) for irrigation

- Minimum volume amount – 500 mL (Saline Fluids listed under Vascular Access Equipment may be used to fulfill this requirement also).

Sterile OB Kit – 1

- Sterile scissors for cutting the umbilical cord may or may not be stocked separate from the obstetrical pack to assure sterility. However, if present, scissors must be of the blunt tipped variety.
- Bulb suction device (if not included in OB kit) – 1

Miscellaneous Equipment

- Latex Free Blood pressure cuff
  - Adult – 1
  - Infant and thigh cuffs optional
- Stethoscope
  - Adult sized – 1
  - Pediatric optional
- Pen light or flashlight type device – 1
- Heavy-duty bandage scissors or paramedic shears – 1
- Thermometer (glass or digital electronic) – 1 (minimum temp of 88 F and at least 104 F)
  - Measures by oral, rectal, or axillary methods
  - Cover probes – 5
- Pedia Tape - 1

Personal Protective Equipment (latex-free equipment should be available)

- Protective eye wear (goggles, full-peripheral glasses, or face masks) – 1
- Protective face mask/shield – 1
- HEPA TB or NIOSH N 95 facemask – 1
- Exam gloves (latex free) – 3 pair
- Antiseptic hand sanitizer (waterless antiseptic agent) – 1
- Simple “surgical type” face masks for patient use -- 5

Three through Twelve Lead ECG Monitoring with Manual cardioversion/defibrillation/pacing

- Adult Pads-2
- Pedi Pads -1
- ECG Electrodes – 1 package
- Spare roll of ECG paper- 1
- Spare ECG batteries – 2
- Tincture Benzoin – 1 spray container or 2 applicators
- Disposable razor - 1

One of the following devices for delivery of artificial ventilation in adult /pediatric patients

- Latex free Bag Valve Mask Device
- System approved BVM with delivery volumes sufficient for adult and child/infant patients – 1 each
- Ventilation bags should be self refilling without a pop-off valve
- Infant, Child and Adult bags are suitable for supporting adequate tidal volumes for the entire pediatric age range
  - Child (up to 450 mL reservoir) – 1
  - Adult (at least 1,000 mL reservoir) – 1

- Reservoir bag or enrichment tube with oxygen tubing appropriate for each BVM – 1 each
- Clear face mask of adult and child/infant sizes – 1 each

Portable suction device

- V-VAC or Suction Easy or other system approved equivalent – 1
- Flexible Suction Catheters 6Fr, 8Fr, 10Fr, 12Fr, 14Fr, 16Fr, 18Fr – 1 each
- Rigid Suction Catheter – 1
- Spare Suction Tubing appropriate for equipment used
- Spare Canister appropriate for equipment used – 1each
- Meconium Aspirator – 1
- Toomy 60 ml syringe - 1

Glucometer and Kit including:

- Glucose clinical Test strips – 5
- Calibration and check test strips – 1 each
- Test control solution and instructions – 1 bottle
- Disposable and retractable safety lock lancet – 5
- Chlorohexadine prep pads – 2
- Band-aids - 2

Medications:

- Baby Aspirin 81mg (chewable) tablets – 1 bottle
- Oral glucose **or** Level Glucose, 15 grams
- Albuterol sulfate 0.083% 3 mL unit dose vial – 3
- Dextrose - minimum 25 grams (D10W 250mL S/W)
- Diphenhydramine 50 mg for IV or IM – 1
- Diphenhydramine PO 25 mg capsules – 5 capsules
- Ipratropium Bromide 0.02% 2.5 mL unit dose vial – 2
- Naloxone (1 mg/mL or 0.4 mg/mL concentration) – 2
- Acetaminophen 32 mg/1 mL liquid PO Pedi dose – 1 bottle
- Acetaminophen 80 mg/Tablet PO Meltaways – 1 bottle
- Acetaminophen PO 1 gram – 1 dose
- Ibuprofen PO 400 mg – 1 dose
- Glucagon IM/IN - 1mg
- Lidocaine 2% 100 mg/ 5 mL – 4 doses
- Lidocaine 2% 250mL premixed bag - 1
- Nitroglycerin 0.4 mg SL tablets or SL Spray – 1 bottle
- Nitroglycerin Paste - 1 tube and papers
- Calcium Chloride 10% 1 gram vials – 2
- Epinephrine 1:1000 1 mL ampule – 3
- Epinephrine 1:10:000 10 mL – 3 doses
- Methylprednisolone 125 mg act-o-vial – 1
- Sodium Bicarbonate 50 mEq ampule or vial - 2
- Atropine Sulfate 1:10:000 10 mL – 3 doses **or** 8mg/20mL (1 vial)
- Adenosine 12 mg vial - 2
- Amiodarone 150 mg vial -3
- Magnesium Sulfate 50% 1 gram vials – 2
- Levophed 4mg vial - 1

- Ondansetron IV 4mg vial – 1
- Ondansetron 4mg ODT - 1 dose
- Benzocaine 20% 2oz spray – 1
- Xylocaine gel packet – 1
- Neo-Synephrine nasal spray - 1 bottle
- Haloperidol 5mg/1mL ampule – 1
- Enalaprilat 1.25mg/1mL vial – 1
- Adult EPI Auto Injector- 1
- Pedi EPI Auto Injector- 1 (optional)
  -OR-
- Epinephrine Anaphylaxis Kit – 2
  - Each Kit contains:
    - (1) Epinephrine 1:1,000 1mL ampule
    - (1) 0.3 cc safety syringe with needle
    - (2) Chlorohexadine prep pads
    - (2) Band-aids
    - (2) 4x4s (sterile package)

Nebulizer Kit

- T piece adapter – 1
- Nebulization chamber – 1
- Mouth piece – 1
- Face mask assembly (Adult and Pedi) – 1ea
- Oxygen supply tubing – 1
- Flex tubing – 1
- Universal cuff adapter (nebulizer to BVM facemask) - 1

Saline for Nebulization: 3 mL unit dose vial – 2ea

Advanced Airway and Ventilation Equipment

- I-gel Airway sizes:
  - 3.0 - 1
  - 4.0 - 1
  - 5.0 – 1
- Endotrachael Tube sizes 4, 4.5, 5, 5.5, 6, 7, 8 – 1 each
- Endotrachael Tube sizes 2.5, 3, 3.5 – 2 each
- ET Introducer/Bougie sizes Adult and Pedi -1 each
- BAAM device – 1 each
- Needle Cricothyrotomy Kit – 1
- Surgical Cricothyrotomy Kit – 1
- Commercial made (system approved) advanced airway tube holder (1 Adult & 1 Pedi)
- Laryngoscope handle (C battery size) – 1
- Extra bulb – 1 (if used for light source)
- Extra C cell sized batteries – 2
- Laryngoscope blades.
  - Miller sizes 0, 1, 2, 3, and 4 – 1 each
  - Macintosh sizes 1, 2, 3 and 4 – 1 each
- Magill forceps Large and Small – 1 each
- Water soluble lubricating jelly packets – 4

Impedance Threshold Device (ITD) –1

Pulse Oximeter

- With probes adult and pediatric – 1 each

Colorimetric End tidal CO2 Detector

- Adult – 1
- Pedi – 1

Continuous Wave Form Capnography

Continuous Positive Airway Pressure Ventilation (CPAP) 1 Kit (incl. Adult mask sizes large & small and Child mask)

Vascular Access Equipment

- 60 drop (micro) infusion IV set – 2
- 10 drop (macro) infusion set – 1
- Dial-a-flow fluid limit device – 2
- IV arm boards - 2
- IV tourniquet (latex free) – 2
- IV loop – 1
- 0.9% Normal Saline solution, 250 mL – 1 bag
- 0.9% Normal Saline solution, 1000 mL – 1 bag
- System approved intravenous catheters (self-sheathing, needle-less system)
  - 14 gauge – 2
  - 16 gauge – 2
  - 18 gauge – 2
  - 20 gauge – 2
  - 22 gauge – 1
  - 24 gauge – 1
  - Saline lock hubs – 2
- Chlorohexadine prep pads – 5
- Small sharps safety container – 1
- 0.9% sodium chloride vial or prefilled syringe (5 or 10 mL) – 2
- Tegaderm – 2
- Venigard – 2
- Pressure infusion bag – 1
- IV Burette - 1

Sterile Syringes

- 1 cc safety syringe with needle – 2
- 3 cc safety syringe with needle – 2
- 12cc safety syringe without needle – 2

Mucosal Atomization Device – 1

Pleural Decompression Kit – 1

Sterile Needles

- Assorted sizes (19, 20, 25 gauge) – 1 each

EZIO Driver and associated Adult/Pedi and Bariatric size Needles and Supplies -1 set

----------Optional Equipment /Medications----------

Emesis bags/containers - 2

Authorized System Qualifications

The Medical Director, per Clinical Standard CS – 26, may authorize System Qualifications to further enhance the delivery of Pre-hospital Emergency Medical Services.

System Educator (SED): This person is tasked with the timely and appropriate delivery of System Medical Education to their Organization. This education may include but is not limited to OMD education modules, skills validations and just in time training on new or enhanced devices, supplies or processes. This person may be called upon to assist in education delivery throughout the System.

- Must be an OMD credentialed provider in good standing
- Current DSHS certification/license
    - This requirement does not apply to EMD Credentialed Providers
- Letter of support/approval from the Chief of the sponsoring organization or their designee
- Successful completion of all required OMD training for the qualification
- Successful completion of the OMD qualifying process
- Meets expectations of the qualification including but not limited to:
    - Completion of required documentation
    - Maintains confidentiality and integrity of all testing processes/documents
    - Maintains records of all training activities, remediation or other documentation
    - Maintains confidentiality of provider records

Performance Management/Improvement (PMI): This person is tasked with the timely and appropriate function of Performance Management and Improvement within their Organization. These tasks may include but are not limited to the collection and reporting of required data elements, investigation and review of events, participating in clinical review processes and delivering provider feedback.

- Must be an OMD credentialed provider in good standing
- Current DSHS certification/license
    - This requirement does not apply to EMD Credentialed Providers
- Letter of support/approval from the Chief of the sponsoring organization or their designee
- Successful completion of the OMD qualifying process
- Successfully complete all OMD required training for Performance Improvement Officers
- Meets expectations of the qualification including but not limited to:
    - Coordination and/or implementation of performance improvement initiatives, programs and activities as defined by the OMD
    - Utilization of System defined PI concepts and practices
    - Completion of required documentation
    - Maintains records of all performance improvement activities, remediation or other required documentation
    - Maintains confidentiality of provider records and the content of all performance improvement reviews

Authorized System Qualifications

System Credentialing Preceptor (SCP): This person is tasked with precepting approved candidates for credentialing by the OMD. System Credentialing Preceptors may precept candidates seeking credentialing at or below the SCP's credential level. The SCP tasks may include but are not limited to the following; mentoring, feedback, assessment of patient care delivered, skill proficiency and over all call management.

- Must be an OMD credentialed provider in good standing
- Current DSHS certification/license
    - This requirement does not apply to EMD Credentialed Providers
- Letter of support/approval from the Chief of the sponsoring organization or their designee
- Successful completion of the OMD qualifying process
- Successful completion of all required testing/skills verification
- Successful completion of all OMD required training for the qualification
- Meets expectations of the qualification including but not limited to:
    - Completion of required documentation
    - Maintains confidentiality of provider records

Community Resource Paramedic Provider (CPP): This person is tasked with the delivery of pre-hospital emergency medicine to under-served and/or under-resourced patient populations within the System. These tasks include but are not limited to delivery of direct patient care via specialized protocols; patient resource needs assessments and facilitation of community resources to meet patient needs.

- Must be an OMD credentialed paramedic provider in good standing
- Current DSHS certification/license
- Letter of support/approval from the Chief of the sponsoring organization or their designee
- Successful completion of the OMD qualifying process
- Successful completion of Community Paramedic training program
- Successful completion of all OMD required training for Community Paramedics
- Meets expectations of the qualification including but not limited to:
    - Completion of required documentation
    - Maintains records of all Community Paramedic activities, referrals or other required documentation
    - Maintains confidentiality of patient records

Special Operations – Tactical Medic (TAC): This person is tasked with providing tactical medical support to Law Enforcement during training exercises, tactical operations or as otherwise requested by law enforcement. These tasks include but not limited to hot zone entry/operations, patient assessments, treatments per system or specialized protocol, rapid extrication of patient(s) and medical monitoring/rehabilitation functions as needed.

- Must be an OMD Credentialed provider at the Paramedic level in good standing.
- Current DSHS certification/license
- Provide a letter of support/approval from the Chief of the sponsoring organization or their designee.
- Provide a letter of support/approval from the Chief of the law enforcement agency or their designee.
- Successful completion of the OMD screening process (es)
- Successful completion of required qualifying process
- Successful completion of all required testing/skills verification
- Successful completion of all OMD required training for the qualification
- All procedures and medications listed in the Special Operations/HAZMAT section of the Protocols and/or Appendices.

Immunization (IMM): This person is tasked with providing vaccine or related medication delivery within agencies and the community-at-large as approved by the Medical Director and OMD System Infection Preventionist. Such a provider will be trained according to National Standards including but not limited to appropriate pre-administration screening for the indications and contra-indications for such immunizations, understanding the delivery routes for each type of vaccine that may be utilized, completing the appropriate documentation requirements of the locality, state, and federal governments, knowledge in the recognition of moderate and severe adverse events and initiates treatments per defined protocol(s), and reports such events through the Vaccine Adverse Event Reporting System (VAERS).

- Successful completion of the OMD screening process
- Successful completion of all required testing/skills verification
- Must meet all Program requirements **(including annual renewals)** as currently defined by the OMD Infection Control Officer.
- Persons qualified to provide immunizations (IMM) will be permitted to:
    - Administer medications/perform procedure for the treatment of allergic reactions as defined by the immunizations procedures/protocol.
    - Administer routine, seasonal, or pandemic related medication and/or delivery routes authorized by OMD.

Authorized System Qualifications

Transport Provider (TSP): This person is tasked with the appropriate, timely and safe transport of System patients to System approved medical facilities. Including but not limited to patient assessment, appropriate treatment per protocol at their Credential level or below, call management as indicated and medical monitoring/rehabilitation functions as needed per event.

- Must be an OMD credentialed provider (EMT-B or above) in good standing
- Current DSHS certification
- Letter of support/approval from the Chief of the sponsoring organization or their designee
- Successful completion of the OMD screening process
- Successful completion of the Transport Provider training program
- Attend all OMD required training for Transport Providers
- Meets expectations of the position including but not limited to:
    - Completion of required documentation
    - Maintains confidentiality of patient records
    - Transports System Patients to OMD approved Medical Facilities
    - Maintains required Operational competencies for Transport Providers

Phlebotomy Services Provider (PSP): This provider is tasked with appropriately and safely performing legally ordered blood draws for Law Enforcement. In custody individuals will be presented to have their blood drawn in accordance with judicial orders for persons suspected of being under the influence of ETOH and/or other substances. The PSP will not perform these tasks as a part of their normal medical response duties. These tasks will only be performed as a separate duty assignment that does not involve the duties of a medical first responder.

- Must be an OMD credentialed provider (EMT-B or above) in good standing
- Current DSHS certification
- Letter of support/approval from the Chief of the sponsoring organization or their designee
- Successful completion of the OMD screening process
- Meets expectations of the position including but not limited to:
    - Completes all OMD required training/skill assessments for PSP
    - Completes all LE required training/skill assessments for PSP
    - Completion of required documentation
    - Maintains confidentiality of records

Authorized Skills Credential Level

Every credentialed provider that delivers medical care within the System must be able to perform skills consistent with the expectations of their system credential. Each Credential level builds on all previous Credential levels (i.e., EMT-Intermediate is responsible for all System Responder, EMT-B & EMT-I skills). The following defines the approved skills by credential level for Providers in the ATCEMS System. Providers/Responders "**must not**" practice outside their System Credentialed Scope of Practice.

The following skills/interventions are authorized by Credential Level in our System:

Emergency Medical Dispatch (EMD) Credentials

- Pre-arrival instructions as defined by MPD
- Determination of response codes by MPD
- Post-dispatch instructions
- Determination of obvious death by MPD

System Responder Credential (DSHS ECA or EMT-B)

- Patient Assessment
- Spinal Motion Restriction
- CPR/AED application
- Oropharyngeal airway
- Oropharyngeal suctioning
- Nasopharyngeal airway
- Pulse Oximetry
- External Patient Cooling
- Kendrick Traction Device (KTD)
- BURP Procedure
- Bag-valve Mask Device
- Blood Glucose Assessment
- Aspirin
- Oral glucose administration
- Bandaging/Splinting
- Emergency Childbirth
- Oxygen administration
- Tourniquet
- Pelvic Binder (Sam Sling)
- Determination of obvious death
- Impedence Threshold Device

(**DSHS EMT – B Only** Assist patient with prescribed medications: SL NTG, MDI, Epi-Pen)

Emergency Medical Technician – Basic Credential (Enhanced Skills/Medications)

All System Responder requirements/skills/interventions plus:

Medication administration: all medications and routes as outlined in System Responder and EMT-B level Protocols

- Small volume nebulizer
- Epinephrine IM 1:1000 (draw and inject)
- Adult BIAD in Cardiac Arrest only
- 12 Lead ECG Placement
- Continuous Positive Airway Pressure (CPAP) device
- Epinephrine Auto-injector
- 12 Lead ECG acquisition if trained

Upon decision by a Credentialed Intermediate or Paramedic Provider/Responder to administer PO, SL, Topical, or Nebulized Medications per Protocol; an EMT-B Credentialed Provider/Responder is approved to facilitate the physical delivery of these medications.

EMT-B Transport Qualified Providers are authorized to prepare medications during Cardiac Arrest and:

- Administer: Ipratropium Bromide (Atrovent)

Authorized Skills Credential Level

Emergency Medical Technician – Intermediate Credentials

All System Responder and EMT-B requirements/skills/interventions plus:

Medication administration: all medications and routes as outlined in System Responder, EMT-B and EMT-I level Protocols

- Peripheral intravenous access (IV) (No EJ)
- Intranasal Medication Route (IN)
- Tracheal suctioning
- Intramuscular Injection Medication Route
- FBAO with direct laryngoscopy
- Intraosseous access (IO) (Cardiac Arrest only)
- Gastric tube insertion
- End-tidal CO2 assessment
- Adult BIAD Airway
- Eye Irrigation with Lidocaine

Paramedic

All System Responder, EMT-B, EMT-I requirements/skills/interventions plus:

Medication administration: all medications and routes as outlined in System Responder, EMT-B, EMT-I and Paramedic Protocols

- Pleural decompression
- Manual cardioversion, defibrillation and pacing
- Therapeutic Hypothermia (ROSC)
- Nasotracheal intubation
- Cetacaine (Hurricane topical anesthetic spray)
- Needle cricothyrotomy (Pedi)
- External jugular vein cannulation
- Determination of Death Pronouncements
- ECG monitoring (3, 4 and 12 Lead) and interpretation
- Alternate vascular access (indwelling catheter)
- Flex guide Endotracheal Tube Introducer (a.k.a. gum-elastic bougie)
- Orotracheal Intubation
- Topical nasal vasoconstrictor
- Beck Airway Airflow Monitor (BAAM)
- Surgical cricothyrotomy kit

BLS Minimum Equipment List
FRO Tier 1 Organizations

Austin-Travis County EMS System

First Response Minimum Equipment Stocking List

The use of Equipment or Supplies not approved by the System Medical Director during patient care is prohibited. Approved items are specified per the Equipment Lists for each System Organization Tier and Credentialing Level, Clinical Standard CS - 30.

System Responder and EMT-B Credential Levels

BLS Airway Adjuncts: Minimum of all Adult sizes may also have Pedi sizes

- NPA – 1 of each
- OPA – 1 of each
- Water soluble lubricating jelly – 2

Portable Oxygen Delivery System

- Oxygen bottle (may be one of either A, super C, D, or E size) – 1
- Cylinder pressure gauge (brass preferred) – 1
- Adjustable liter flow meter (brass preferred) minimum– 15 Lpm. – 1
- Oxygen cylinder wrench – 1
- Oxygen administration supplies
  - Nasal cannula – 2
  - Non-rebreathing mask – 2
  - Pediatric Non rebreather – 1
  - Infant face mask – 1

Bandages, Dressings and Splinting

- Latex free band-aids – 5
- Sterile 4x4s – 10
- Non-sterile 4x4s – 25
- Ice Packs - 6
- Trauma dressing – 1
- Occlusive dressing – 1
- Triangular bandages – 3
- Self-adhering gauze bandages (Kerlex or acceptable equivalent) – 3
- Adhesive tape (should be hypoallergenic/latex free when available) – 1 roll
- Padded Short Board Splint –1 and/or 1 Sam Splint
- Padded Medium Board Splint –1 and/or 1 Sam Splint
- Kendrick Traction Splint Device (KTD) –1 (per Organization)

Spinal Motion Restriction (per Organization)

- Long Back Board with straps –1
- Adjustable Adult C-Collar –1
- Adjustable Pedi C-Collar ---1
- Head Blocks –1 package or set

Sterile (Saline Solution or Water) for irrigation

- Minimum volume amount – 500 mL (two 250 mL bags or bottles acceptable)

BLS Minimum Equipment List
FRO Tier 1 Organizations

Sterile OB Kit – 1

- Sterile scissors for cutting the umbilical cord may or may not be stocked separate from the obstetrical pack to assure sterility. However, if present, scissors must be of the blunt tipped variety.
- Bulb suction device (if not included in OB kit) – 1

Miscellaneous Equipment

- Latex Free Blood pressure cuff
  - Adult – 1
  - Infant and thigh cuffs optional
- Stethoscope
  - Adult sized – 1
  - Pediatric optional
- Pen light or flashlight type device – 1
- Heavy-duty bandage scissors or paramedic shears – 1
- Thermometer (glass or digital electronic) – 1 (minimum temp of 88 F and at least 104 F)
  - Measures by oral, rectal, or axillary methods
  - Cover probes – 5

Personal Protective Equipment (latex-free equipment should be available)

- Protective eye wear (goggles, full-peripheral glasses, or face masks) – 1
- Protective face mask/shield – 1
- HEPA TB or NIOSH N 95 facemask – 1
- Exam gloves (latex free) – 3 pair
- Antiseptic hand sanitizer (waterless antiseptic agent) – 1
- Simple “surgical type” face masks for patient use -- 5

AED Device-1 (per Organization)

- Adult Pads-1
- Pedi Pads -1
- Impedance Threshold Device (ITD) –1

One of the following devices for delivery of artificial ventilation in adult /pediatric patients

- Latex free Bag Valve Mask Device
- System approved BVM with delivery volumes sufficient for adult and child/infant patients – 1 each
- Ventilation bags should be self refilling without a pop-off valve
- Child and adult bags are suitable for supporting adequate tidal volumes for the entire pediatric age range
  - Child (up to 450 mL reservoir) – 1
  - Adult (at least 1,000 mL reservoir) – 1
- Reservoir bag or enrichment tube with oxygen tubing appropriate for each BVM – 1 each
- Clear face mask of adult and child/infant sizes – 1 each

-OR-

- Pocket /Face Mask or Face Shield
- With or without one-way valve and oxygen inlet

Portable suction device

- V-VAC or Suction Easy or other system approved equivalent with spare disposables – 1

Glucometer and Kit including:

- Glucose clinical Test strips – 5
- Calibration and check test strips – 1 each
- Test control solution and instructions – 1 bottle
- Disposable and retractable safety lock lancet – 5
- Chlorohexadine prep pads – 2
- Band-aids - 2

Medications:

- Baby Aspirin 81mg (chewable) tablets – 1 bottle
- Oral glucose **or** Level Glucose, 15 grams

----------Optional Equipment/Medications That May Be Stocked for EMT-B----------

ECG Electrodes – 1 package

- Tincture Benzoin – 1 spray container or 2 applicators (for ECG Electrodes if needed)

Nebulizer Kit

- T piece adapter – 1
- Nebulization chamber – 1
- Mouth piece – 1
- Face mask assembly (Adult and Pedi) – 1ea
- Oxygen supply tubing – 1
- Flex tubing – 1

Saline for Nebulization: 3 mL unit dose vial – 2

Airway and Ventilation Equipment

- I-gel Airway sizes for Cardiac Arrest only :
  - 3.0 - 1
  - 4.0 - 1
  - 5.0 – 1

Pulse Oximeter (required with BIAD Airway)

- With probes adult and pediatric – 1 each

Colorimetric End tidal CO2 Detector (required with BIAD Airway)

- Adult – 1

Continuous Positive Airway Pressure Ventilation (CPAP) 1 Kit (incl. Adult large & small masks and Child mask)

Epinephrine Anaphylaxis Kit – 2

- Each Kit contains:
  - (1) Epinephrine 1:1,000 1mL ampule
  - (1) 0.3 cc safety syringe with needle
  - (2) Chlorhexidine prep pads
  - (2) Band-Aids
  - (2) 4x4s (sterile package)

BLS Minimum Equipment List
FRO Tier 1 Organizations

Medications:

- Albuterol sulfate 0.083% 3 mL unit dose vial – 3
- Adult EPI Auto Injector- 1
- Pedi EPI Auto Injector- 1

-OR-

- Epinephrine Anaphylaxis Kit – 2
  - Each Kit contains:
    - (1) Epinephrine 1:1,000 1mL ampule
    - (1) 0.3 cc safety syringe with needle
    - (2) Chlorohexadine prep pads
    - (2) Band-aids
    - (2) 4x4s (sterile package)

Bandages and Dressings

- Commercially Designed Tourniquet- 2
- Pelvic Binder (Sam Sling) –1

Emesis bags/containers - 2

BLS Minimum Equipment List
FRO Tier 2 Organizations

Austin-Travis County EMS System

First Response Minimum Equipment Stocking List

The use of Equipment or Supplies not approved by the System Medical Director during patient care is prohibited. Approved items are specified per the Equipment Lists for each System Organization Tier and Credentialing Level, Clinical Standard CS - 30.

EMT-B Credential Levels

BLS Airway Adjuncts: Minimum of all Adult sizes may also have Pedi sizes

- NPA – 1 of each
- OPA – 1 of each
- Water soluble lubricating jelly – 2

Portable Oxygen Delivery System

- Oxygen bottle (may be one of either A, super C, D, or E size) – 1
- Cylinder pressure gauge (brass preferred) – 1
- Adjustable liter flow meter with high pressure port (brass preferred) minimum flow 15 Lpm. – 1
- Oxygen cylinder wrench – 1
- Oxygen administration supplies
  - Nasal cannula – 2
  - Non-rebreathing mask – 2
  - Pediatric Non rebreather – 1
  - Infant face mask – 1

Bandages, Dressings and Splinting

- Latex free band-aids – 5
- Sterile 4x4s – 10
- Non-sterile 4x4s – 25
- Ice Packs - 6
- Trauma dressing – 1
- Occlusive dressing – 1
- Triangular bandages – 3
- Self-adhering gauze bandages (Kerlex or acceptable equivalent) – 3
- Adhesive tape (should be hypoallergenic/latex free when available) – 1 roll
- Padded Short Board Splint –1 and/or 1 Sam Splint
- Padded Medium Board Splint –1 and/or 1 Sam Splint
- Padded Long Board Splint –1
- Kendrick Traction Splint Device (KTD) –1 (per Organization's Primary Response Apparatus)
- Commercially Designed Tourniquet- 2
- Pelvic Binder (Sam Sling) –1 ea size small and large

Spinal Motion Restriction (per Organization's Primary Response Apparatus)

- Long Back Board with straps –1
- Adjustable Adult C-Collar –1
- Adjustable Pedi C-Collar ---1
- Head Blocks –1 package or set

Sterile (Saline Solution or Water) for irrigation

- Minimum volume amount – 500 mL (two 250 mL bags or bottles acceptable)

Sterile OB Kit – 1

- Sterile scissors for cutting the umbilical cord may or may not be stocked separate from the obstetrical pack to assure sterility. However, if present, scissors must be of the blunt tipped variety.
- Bulb suction device (if not included in OB kit) – 1

Miscellaneous Equipment

- Latex Free Blood pressure cuff
  - Adult – 1
  - Infant and thigh cuffs optional
- Stethoscope
  - Adult sized – 1
  - Pediatric optional
- Pen light or flashlight type device – 1
- Heavy-duty bandage scissors or paramedic shears – 1
- Thermometer (glass or digital electronic) – 1 (minimum temp of 88 F and at least 104 F)
  - Measures by oral, rectal, or axillary methods
  - Cover probes – 5
  - ECG Electrodes – 1 package
    - Tincture Benzoin – 1 spray container or 2 applicators (for use with ECG Electrodes if needed)

Personal Protective Equipment (latex-free equipment should be available)

- Protective eye wear (goggles, full-peripheral glasses, or face masks) – 1
- Protective face mask/shield – 1
- HEPA TB or NIOSH N 95 facemask – 1
- Exam gloves (latex free) – 3 pair
- Antiseptic hand sanitizer (waterless antiseptic agent) – 1
- Simple “surgical type” face masks for patient use -- 5

AED Device-1 (per Organization’s Primary Response Apparatus)

- Adult Pads-1
- Pedi Pads -1
- Impedance Threshold Device (ITD) – 1

One of the following devices for delivery of artificial ventilation in adult /pediatric patients

- Latex free Bag Valve Mask Device
- System approved BVM with delivery volumes sufficient for adult and child/infant patients – 1 each
- Ventilation bags should be self refilling without a pop-off valve
- Infant, Child and Adult bags are suitable for supporting adequate tidal volumes for the entire pediatric age range
  - Child (up to 450 mL reservoir) – 1
  - Adult (at least 1,000 mL reservoir) – 1

- Reservoir bag or enrichment tube with oxygen tubing appropriate for each BVM – 1 each
- Clear face mask of adult and child/infant sizes – 1 each

Portable suction device

- V-VAC or Suction Easy or other system approved equivalent with spare disposables – 1

Glucometer and Kit including:

- Glucose clinical Test strips – 5
- Calibration and check test strips – 1 each
- Test control solution and instructions – 1 bottle
- Disposable and retractable safety lock lancet – 5
- Chlorohexadine prep pads – 2
- Band-aids - 2

Medications:

- Baby Aspirin 81mg (chewable) tablets – 1 bottle
- Oral glucose **or** Level Glucose, 15 grams
- Albuterol sulfate 0.083% 3 mL unit dose vial – 3
- Adult EPI Auto Injector- 1
- Pedi EPI Auto Injector- 1

-OR-

- Epinephrine Anaphylaxis Kit – 2
  - Each Kit contains:
    - (1) Epinephrine 1:1,000 1mL ampule
    - (1) 0.3 cc safety syringe with needle
    - (2) Chlorhexidine prep pads
    - (2) Band-Aids
    - (2) 4x4s (sterile package)

Nebulizer Kit:

- T piece adapter – 1
- Nebulization chamber – 1
- Mouth piece – 1
- Face mask assembly (Adult and Pedi) – 1ea
- Oxygen supply tubing – 1
- Flex tubing – 1

Saline for Nebulization: 3 mL unit dose vial – 2

Advanced Airway and Ventilation Equipment

- I-gel Airways sizes for Cardiac Arrest only:
  - 3.0 - 1
  - 4.0 - 1
  - 5.0 – 1

Pulse Oximeter **(required with BIAD Airway)**

- With probes adult and pediatric – 1 each

Colorimetric End tidal CO2 Detector or Capnography **(required with BIAD Airway)**

- Adult – 1

Continuous Positive Airway Pressure Ventilation (CPAP) 1 Kit (incl. Adult large & small masks and Child mask)

----------Optional Equipment /Medications----------

Emesis bags/containers - 2

OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

Certified Statement of Required Education Module Completion

Credentialing candidates, appropriately affiliated with a System OMD Registered Organization, desiring to take the Protocol Examination must present this document to the OMD prior to testing.

System Responder Credential Level:

- ❑ **Successfully completed the "System Pit Crew" CPR Education Module and Skill Competency. DATE Completed:_____.**
- ❑ **Successfully completed all other OMD currently designated Mandatory Education Modules. List all that apply and the date of completion for each. Refer to the OMD Web Page for current list (attach separate page if needed). Module Title:_____ Date Completed:_____.**

EMT- B or above Provider or Responder Credential Level:

- ❑ **Successfully completed the "System Philosophy of Five" including the "System Pit Crew" CPR Education Module and Skills Competencies. DATE Completed:_____. Test Score_____.**
- ❑ **I certify that this Provider is knowledgeable and competent in the criterion for and application of 12 lead ECG Electrodes Date:_____.**
- ❑ **Successfully completed all other OMD currently designated Mandatory Education Modules. List all that apply and the date of completion for each. Refer to the OMD Web Page for current list (attach separate page if needed). Module Title:_____ Date Completed:_____.**

This document must be signed and dated by one of the following persons in the Candidate's designated Primary Affiliated Organization.

- ❑ **A/TC EMS Department: Clinical Commander or Designated EMS Education Coordinator.**
- ❑ **Fire Department based Organizations: "Chief Officer (s)" or Designated EMS Education Coordinator.**
- ❑ **All other FROs: FRO Administrator or Designated EMS Education Coordinator.**

Student Name (print):_____; TDSHS #_____

Organization Name (print):_____

Certified by: Print Name:_____ Sign Name:_____

Title:_____ Date:_____

Please mark all boxes that apply.

System Equipment & Medications Committee (SEMC)

Standard:

Establish a uniform process for review, selection and System-wide implementation of patient care medications and/or equipment.

Purpose:

The SEMC is a standing committee charged by the Office of the Medical Director to review and make recommendations for selection and implementation of System-wide medications and/or equipment used in providing patient assessment, care, treatment or movement.

Application:

1. Review requests for new equipment or medications to be used for patient care within the System.
2. Review requests for changes to the current medications and/or equipment that are approved for patient care within the System.
3. Review of current medications and/or equipment authorized for use in the System.
4. Coordinate non-patient evaluation/patient trial/research/investigation of all new medications and/or equipment recommended for use in the System.
5. Recommend an appropriate timeline for System implementation.
6. Coordinate with the Protocol Committee in the development of system protocols and related documents as needed.
7. Consult with System Performance Improvement to evaluate the potential impact of the new equipment/medications.
8. Consult in the development of System education related to implementation of new medications or equipment.
9. Provide regular reports and recommendations to the System Medical Director

Credentialing Requirements

Emergency Medical Dispatch – Communications Medic

Initial Credentialing requirements:

1. Current National Academy of Emergency Dispatch (NAED) Emergency Medical Dispatch (EMD) certification
2. Current EMT-B (or above) by the Texas Department of State Health Services (TDSHS)
3. Endorsement and affiliation in good standing with a City of Austin/Travis County EMS System agency or organization
4. Successful completion of all current System Education Modules
5. Successful completion of the current City of Austin/Travis County EMS System EMD Credentialing process

Maintenance Requirements:

1. Current NAED EMD certification
2. Affiliation in good standing with a City of Austin/Travis County EMS System agency or organization
3. Successful completion of all current System Education Modules
4. Successful completion of the current City of Austin/Travis County EMS System EMD Recredentialing process

System Responder

Initial Credentialing requirements:

1. Current Emergency Care Attendant (ECA) Certification (or above) by the Texas Department of State Health Services (TDSHS)
2. Endorsement and affiliation in good standing with a City of Austin/Travis County EMS System agency or organization
3. Current certification through an EMS System approved CPR program
4. Successful completion of all current System Education Modules
5. Successful completion of the current City of Austin/Travis County EMS System, System Responder Credentialing Process

Maintenance Requirements:

1. Current ECA Certification (or above) by TDSHS
2. Affiliation in good standing with a City of Austin/Travis County EMS System agency or organization
3. Current certification through an EMS System approved CPR program
4. Successful completion of all current System Education Modules
5. Successful completion of the current City of Austin/Travis County EMS System Responder Recredentialing Process
6. Successful completion of System Responder skills competency assessment as required by the OMD

Emergency Medical Technician – Basic (EMT-B)

Initial Credentialing requirements:

1. Current EMT-B (or above) by the Texas Department of State Health Services (TDSHS)
2. Endorsement and affiliation in good standing with a City of Austin/Travis County EMS System agency or organization
3. Current certification through an EMS System approved CPR program
4. Successful completion of all current System Education Modules
5. Successful completion of the current City of Austin/Travis County EMS System EMT-B Credentialing process

Maintenance Requirements:

1. Current EMT-B Certification (or above) by TDSHS
2. Affiliation in good standing with a City of Austin/Travis County EMS System agency or organization
3. Current certification through an EMS System approved CPR program
4. Successful completion of all current System Education Modules
5. Successful completion of the current City of Austin/Travis County EMS System EMT-B Recredentialing process
6. Successful completion of EMT-B skills competency assessment as required by the OMD

Current PHTLS or ITLS certification is recommended

Emergency Medical Technician – Intermediate

Initial Credentialing requirements:

1. Current EMT-Intermediate (EMT-I) Certification (or above) by the Texas Department of State Health Services (TDSHS)
2. Endorsement and affiliation in good standing with a City of Austin/Travis County EMS System agency or organization designated as a "Tier 2 Organization" by the Office of the Medical Director. And, registered with the OMD as an Intermediate Organization or above and Licensed with the TDSHS; as an "Advanced" Organization.
3. Current certification through an EMS System approved CPR program
4. Successful completion of all current System Education Modules
5. Successful completion of the current City of Austin/Travis County EMS System Intermediate Credentialing process
6. Successful completion of all current System Defined Skill Competencies for EMT-I Credential Level

Current PHTLS or ITLS certification is recommended

Maintenance Requirements:

1. Current EMT-I Certification (or above) by TDSHS
2. Endorsement and affiliation in good standing with a City of Austin/Travis County EMS System agency or organization designated as a "Tier 2 Organization" by the Office of the Medical Director. And, continued registration with the OMD as an Intermediate Organization or above and Licensed with the TDSHS; as an "Advanced" Organization.
3. Current certification through an EMS System approved CPR program
4. Successful completion of all current System Education Modules
5. Successful completion of the current City of Austin/Travis County EMS System EMT-I Recredentialing process
6. Successful completion of EMT-I skills competency assessment as required by the OMD

Paramedic

Initial Credentialing requirements:

1. Current EMT-Paramedic (EMT-P) Certification or Licensure (LP) by the Texas Department of State Health Services (TDSHS)
2. Endorsement and affiliation in good standing with a City of Austin/Travis County EMS System agency or organization designated as a "Tier 2 Organization" by the Office of the Medical Director. And, registered with the OMD and Licensed with the TDSHS; as an "Advanced" Organization.
3. Current certification through an EMS System approved CPR program:
4. Successful completion of all current System Required Education Modules
5. Successful completion of all current System Defined Skill Competencies for Paramedic Credential Level
6. Successful completion of the current City of Austin/Travis County EMS System Paramedic Credentialing process

Current PHTLS or ITLS certification and/or ACLS is recommended

Maintenance Requirements:

1. Current EMT-P Certification or Licensure by TDSHS.
2. Endorsement and affiliation in good standing with a City of Austin/Travis County EMS System
3. Agency or organization designated as a "Tier 2 Organization" by the Office of the Medical Director. And, continued registration with the OMD and Licensed with the TDSHS; as an "Advanced" Organization.
4. Current CPR/AED System Approved Program.
5. Successful completion of all current System Required Education Modules
6. Successful completion of the current City of Austin/Travis County EMS System Paramedic Recredentialing process.
7. Successful completion of Paramedic skills verification assessment as required by OMD.

Administrative Provider

Purpose: To create a means of preserving current DSHS certified administrators as contingency providers in the System while reducing their requirements to maintain OMD credentials.

Description: The Administrative Provider Status is available only to providers whose primary role is as administrative personnel in a Tier 2 System Organization and who are no longer expected to provide patient care as part of their regular duties. Administrative personnel are not required to credential as an Administrative Provider and may maintain full OMD privileges at or below their current level of OMD credential as long as they continue to meet all the requirements of that level of credential. This qualification does not apply to providers who require credentialing to remain compliant with their job description.

Application for administrative status: Administrators who wish to apply for an Administrative Credential must provide a letter of approval from the Department Chief, the organizational equivalent or their designee.

Administrative Provider Requirements:
The Administrative Provider must:

- Be in an administrative role without patient care responsibilities in their daily duties as defined by their organization.
- Be an employee/member of a Tier 2 First Responder or ATCEMS Department
- Have a current DSHS certification and OMD credential
- Maintain functional working knowledge of the COGs prescribed by the OMD

- Complete any COG testing commensurate with their level of Administrative Provider credential (i.e. Administrative Provider –Paramedic, Administrative Provider –EMT, etc).
- Complete any competency requirements of their level of Administrative Provider as defined by the OMD.

Administrative Provider Limitations

The Administrative Provider:

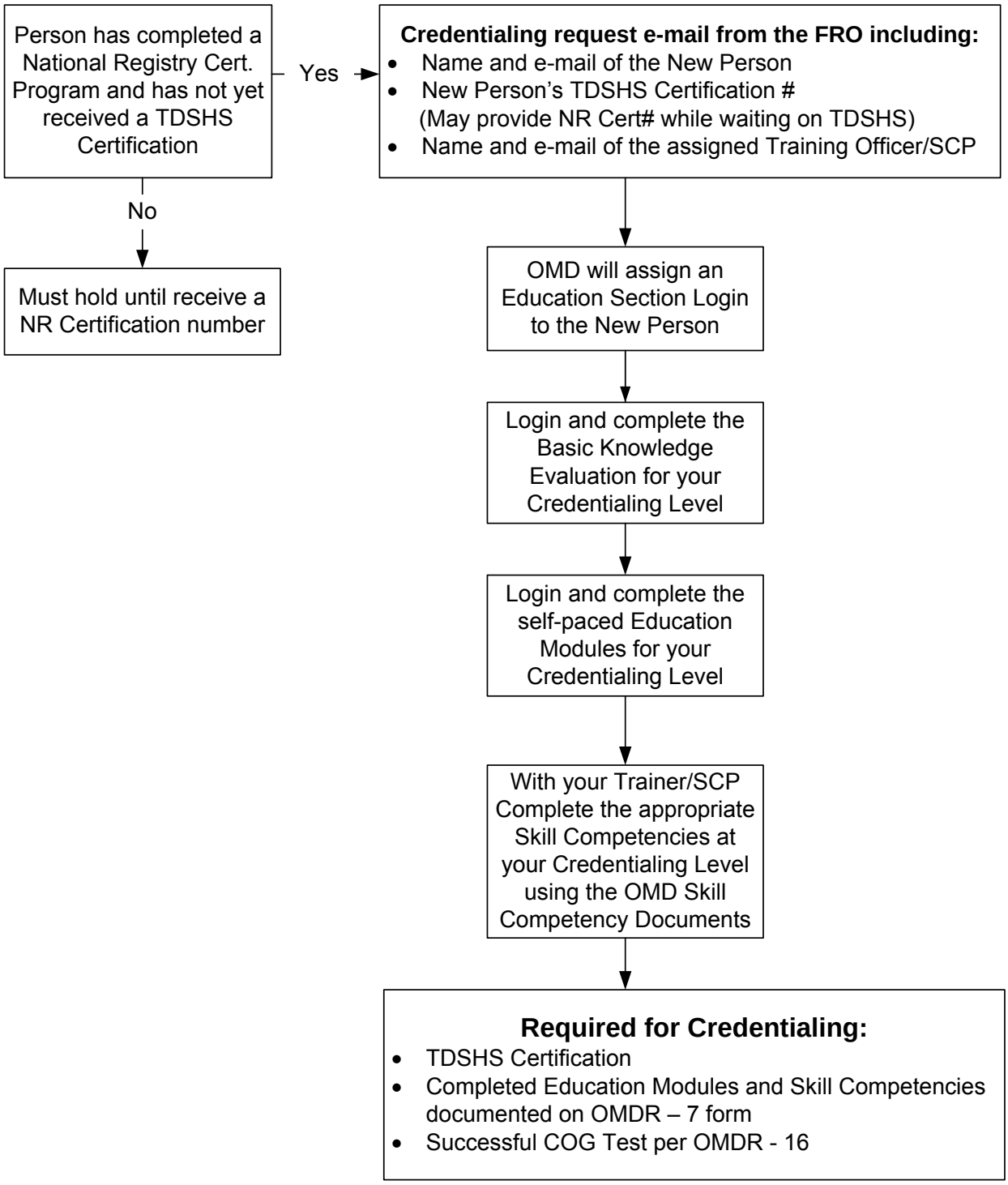
- May assist in patient care activities at their level of Administrative Provider when supervised by a fully credentialed provider of equal or greater credential. In the absence of a fully credentialed provider the unsupervised Administrative Provider may provide life saving interventions.
- Shall not utilize their rank to direct a fully credentialed provider in patient care or management. If there is a disagreement about the management of the patient the conflict should be resolved in accordance with the On-scene Authority Standard or through contact with the On-Call Medical Director. In all other activities rank hierarchy is preserved in accordance with organizational standards and practices.
- Should an Administrative Provider wish to return to a fully credentialed status they must provide a letter of approval from the Department Chief, the organizational equivalent or their designee indicating approval of the providers return to a fully credentialed status. The OMD will review each request individually and create a re-integration plan. Once the provider has successfully completed the reintegration process they will be restored to fully credentialed status.

Eligible Administrative Provider Levels:

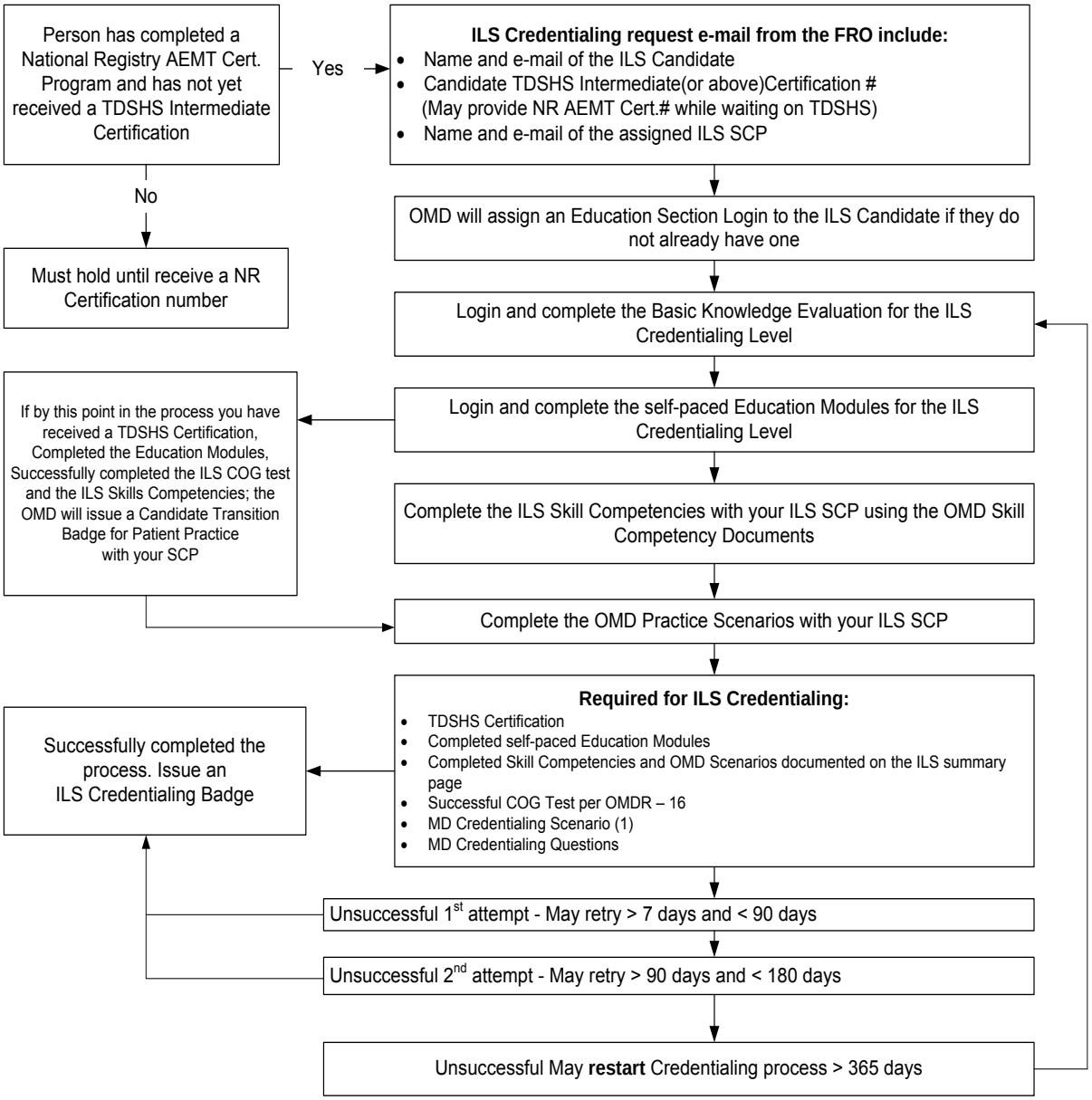
Administrative Provider –Paramedic
Administrative Provider- Intermediate
Administrative Provider – EMT
Administrative Provider – First Responder

Credentialing Requirements

System Responder and EMT-B Credentialing Process for First Responders



ILS Credentialing Process



First Responder Registration
Tier 1 Organizations

Standard:

All ATCEMS System First Responder Organizations must be registered with the OMD and licensed with the TDSHS at the Basic Level. Tier 1 Organization's First Responders' are prohibited from operating above the EMT-B Credentialing Level.

Purpose:

Establish the minimum requirements for Agencies to become a first responder organization within the ATCEMS System.

Application:

Tier 1 Level Registered FR Organizations:

1. The Agency must have a minimum total of **ten (10)** providers eligible to System Credential at the System Responder and/or EMT-B level.
2. The Agency must commit to equipping their BLS providers with the required medications and equipment necessary to provide patient care at the System Responder and/or EMT-B level as defined by the COGs & OMD Reference (**OMDR-4**).
3. Provide each Credentialed provider Organizational support as needed for:
    - System Educational Initiatives.
    - Initial and ongoing Credentialing Requirements at this level.
    - Ongoing TDSHS Certification/Licensure Requirements at this level.
    - Credential and Skill level appropriate supplies and equipment including simulation devices/mannequins to facilitate Training, Competency Assessments and Credentialing at this level.

First Responder Registration
Tier 2 Organizations

Purpose:

Establish the minimum requirements for Tier 2 Organizations to become a first responder organization within the ATCEMS System.

Policy:

All ATCEMS System First Responder Organizations must be registered with the OMD and licensed with the TDSHS at the Basic Level as a minimum. The Intermediate and Advanced registration/licensure levels are optional for those existing System Agencies who are designated as "Tier 2 Organizations" and are DSHS Licensed at the Advanced level.

Procedure:

Basic Level Registered FR Organizations:

1. The Agency must have a minimum total of **ten (10)** providers eligible to System Credential at the System Responder Level or higher.
2. Any change to the agency level of care, staffing level or deployment plan must be pre-approved by the Medical Director.
3. The Organization must commit to equipping their BLS providers with the required medications and equipment necessary to provide patient care at the System Responder and EMT-B level as defined by the COGs & OMD Reference (**OMDR- 5**).
   - Provide each Credentialed provider Organizational support as needed for:
     - System Educational Initiatives.
     - Initial and ongoing Credentialing Requirements at this level.
     - Ongoing TDSHS Certification/Licensure Requirements at this level.
     - Credential and Skill level appropriate supplies and equipment including simulation devices/mannequins to facilitate Training, Competency Assessments and Credentialing at this level.

EMT Intermediate Level Registered FR Organizations:

1. The Agency must have at least **one (1)** EMT-I System Credentialed provider.
2. Any change to the agency level of care, staffing level or deployment plan must be pre-approved by the Medical Director.
3. The System Agency must be:
   - Designated as a "Tier 2 Organization" by the Office of the Medical Director.
   - Registered with the OMD as an Intermediate level Organization.
   - Licensed with the TDSHS as an "Advanced" Organization.
4. The Organization must further commit to equipping and facilitating their EMT-I providers with the medications and equipment necessary to provide patient care from the System Responder up to the EMT-I level as defined by the COGs & OMD Reference (**OMDR-12**).
   - Provide each Credentialed provider Organizational support as needed for:
     - System Educational Initiatives.
     - Initial and ongoing Credentialing Requirements at this level.
     - Ongoing TDSHS Certification/Licensure Requirements at this level.
     - Credential and Skill level appropriate supplies and equipment including simulation devices/mannequins to facilitate Training, Competency Assessments and Credentialing at this level.

First Responder Registration
Tier 2 Organizations

Paramedic Level Registered FR Organizations:

1. The Agency must have at least **one (1)** Paramedic System Credentialed provider.
2. Any change to the agency level of care, staffing level or deployment plan must be pre-approved by the Medical Director.
3. The System Agency must be:
   - Designated as a "Tier 2 Organization" by the Office of the Medical Director.
   - Registered with the OMD as an Advanced level Organization.
   - Licensed with the TDSHS as an "Advanced" Organization.
   - Compliance with ATCOMD, DEA and TxDPS Controlled Substance Registration requirements.
4. The Organization must further commit to equipping and facilitating their Paramedic providers with the medications and equipment necessary to provide patient care at the System Responder up to the Paramedic level as defined by the COGs & OMD Reference (**OMDR-1**).
   - Provide each Credentialed provider Organizational support as needed for:
     - System Educational Initiatives.
     - Initial and ongoing Credentialing Requirements at this level.
     - Ongoing TDSHS Certification/Licensure Requirements at this level.
     - Credential and Skill level appropriate supplies and equipment including simulation devices/mannequins to facilitate Training, Competency Assessments and Credentialing at this level.

ILS Minimum Equipment List
FRO Tier 2 Organizations

Austin-Travis County EMS System

First Response Minimum Equipment Stocking List

The use of Equipment or Supplies not approved by the System Medical Director during patient care is prohibited. Approved items are specified per the Equipment Lists for each System Organization Tier and Credentialing Level, Clinical Standard CS - 30.

EMT- I Credential Levels

BLS Airway Adjuncts: Minimum of all Adult sizes may also have Pedi sizes

- NPA – 1 of each
- OPA – 1 of each
- Water soluble lubricating jelly – 2

Portable Oxygen Delivery System

- Oxygen bottle (may be one of either A, super C, D, or E size) – 1
- Cylinder pressure gauge (brass preferred) – 1
- Adjustable liter flow meter with high pressure port (brass preferred) minimum flow 15 Lpm. – 1
- Oxygen cylinder wrench – 1
- Oxygen administration supplies
  - Nasal cannula – 2
  - Non-rebreathing mask – 2
  - Pediatric Non rebreather – 1
  - Infant face mask – 1

Bandages, Dressings and Splinting

- Latex free band-aids – 5
- Sterile 4x4s – 10
- Non-sterile 4x4s – 25
- Ice Packs - 6
- Trauma dressing – 1
- Occlusive dressing – 1
- Triangular bandages – 3
- Self-adhering gauze bandages (Kerlex or acceptable equivalent) – 3
- Adhesive tape (should be hypoallergenic/latex free when available) – 1 roll
- Padded Short Board Splint –1 and/or 1 Sam Splint
- Padded Medium Board Splint –1 and/or 1 Sam Splint
- Padded Long Board Splint –1
- Kendrick Traction Splint Device (KTD) –1 (per Organization's Primary Response Apparatus)
- Commercially Designed Tourniquet- 2
- Pelvic Binder (Sam Sling) –1 ea size small and large

Spinal Motion Restriction (per Organization's Primary Response Apparatus)

- Long Back Board with straps –1
- Adjustable Adult C-Collar –1
- Adjustable Pedi C-Collar ---1
- Head Blocks –1 package or set

Sterile (Saline Solution or Water) for irrigation

- Minimum volume amount – 500 mL (Saline Fluids listed under Vascular Access Equipment may be used to fulfill this requirement also).

Sterile OB Kit – 1

- Sterile scissors for cutting the umbilical cord may or may not be stocked separate from the obstetrical pack to assure sterility. However, if present, scissors must be of the blunt tipped variety.
- Bulb suction device (if not included in OB kit) – 1

Miscellaneous Equipment

- Latex Free Blood pressure cuff
  - Adult – 1
  - Infant and thigh cuffs optional
- Stethoscope
  - Adult sized – 1
  - Pediatric optional
- Pen light or flashlight type device – 1
- Heavy-duty bandage scissors or paramedic shears – 1
- Thermometer (glass or digital electronic) – 1 (minimum temp of 88 F and at least 104 F)
  - Measures by oral, rectal, or axillary methods
  - Cover probes – 5
- Pedia Tape - 1
- ECG Electrodes – 1 package
  - Tincture Benzoin – 1 spray container or 2 applicators (for use with ECG Electrodes as needed)

Personal Protective Equipment (latex-free equipment should be available)

- Protective eye wear (goggles, full-peripheral glasses, or face masks) – 1
- Protective face mask/shield – 1
- HEPA TB or NIOSH N 95 facemask – 1
- Exam gloves (latex free) – 3 pair
- Antiseptic hand sanitizer (waterless antiseptic agent) – 1
- Simple “surgical type” face masks for patient use -- 5

AED Device-1 (per Organization’s Primary Response Apparatus)

- Adult Pads-1
- Pedi Pads -1
- Impedance Threshold Device (ITD) – 1

One of the following devices for delivery of artificial ventilation in adult /pediatric patients

- Latex free Bag Valve Mask Device
- System approved BVM with delivery volumes sufficient for adult and child/infant patients – 1 each
- Ventilation bags should be self refilling without a pop-off valve
- Infant, Child and Adult bags are suitable for supporting adequate tidal volumes for the entire pediatric age range
  - Child (up to 450 mL reservoir) – 1
  - Adult (at least 1,000 mL reservoir) – 1

- Reservoir bag or enrichment tube with oxygen tubing appropriate for each BVM – 1 each
- Clear face mask of adult and child/infant sizes – 1 each

Portable suction device

- V-VAC or Suction Easy or other system approved equivalent – 1
- Flexible Suction Catheters 6Fr, 8Fr, 10Fr, 12Fr, 14Fr, 16Fr, 18Fr – 1 each
- Rigid Suction Catheter – 1
- Spare Suction Tubing appropriate for equipment used
- Spare Canister appropriate for equipment used – 1each

Glucometer and Kit including:

- Glucose clinical Test strips – 5
- Calibration and check test strips – 1 each
- Test control solution and instructions – 1 bottle
- Disposable and retractable safety lock lancet – 5
- Chlorohexadine prep pads – 2
- Band-aids - 2

Medications:

- Baby Aspirin (chewable) tablets – 1 bottle
- Oral glucose **or** Level Glucose minimum of 15 grams
- Albuterol sulfate 0.083% 3 mL unit dose vial – 3 doses
- Dextrose - minimum 25 grams (D10W 250mL S/W)
- Diphenhydramine 50 mg for IV or IM
- Diphenhydramine PO 25 mg – 2 doses
- Ipratropium Bromide 0.02% 2.5 mL unit dose vial – 1 dose
- Naloxone minimum of 4 mg for IV/IM/IN
- Acetaminophen 32 mg/1 mL liquid PO Pedi dose – 1 bottle
- Acetaminophen 80 mg/Tablet PO Meltaways – 1 bottle
- Acetaminophen PO 1 gram – 1 dose
- Ibuprofen PO – 1 COG dose
- Glucagon – 1 mg IM
- Lidocaine 100 mg
- Nitroglycerin SL tablets or SL Spray – 1 bottle
- Nitroglycerin Paste - 1 tube and papers
- Adult EPI Auto Injector- 1
- Pedi EPI Auto Injector- 1 (optional)
  -OR-
- Epinephrine Anaphylaxis Kit – 2
  - Each Kit contains:
    - (1) Epinephrine 1:1,000 1mL ampule
    - (1) 0.3 cc safety syringe with needle
    - (2) Chlorhexidine prep pads
    - (2) Band-Aids
    - (2) 4x4s (sterile package)

Nebulizer Kit

- T piece adapter – 1
- Nebulization chamber – 1
- Mouth piece – 1
- Face mask assembly (Adult and Pedi) – 1ea
- Oxygen supply tubing – 1
- Flex tubing – 1

Saline for Nebulization: 3 mL unit dose vial – 2ea

Advanced Airway and Ventilation Equipment

- I-gel Airways sizes:
  - 3.0 - 1
  - 4.0 - 1
  - 5.0 - 1
- Commercial made (system approved) advanced airway tube holder
- Laryngoscope handle (C battery size) – 1
- Extra bulb – 1 (if used for light source)
- Extra C cell sized batteries – 2
- Laryngoscope blades.
  - Miller sizes 0, 1, 2, 3, and 4 – 1 each
  - Macintosh sizes 1, 2, 3 and 4 – 1 each
- Magill forceps Large and Small – 1 each

Pulse Oximeter **(required with BIAD Airway)**

- With probes adult and pediatric – 1 each

Colorimetric End tidal CO2 Detector or Capnography **(required with BIAD Airway)**

- Adult – 1

Continuous Positive Airway Pressure Ventilation (CPAP) 1 Kit (incl. Adult mask sizes large & small and Child mask)

Vascular Access Equipment

- 60 drop (micro) infusion IV set – 2
- 10 drop (macro) infusion set – 1
- IV arm boards - 1
- IV tourniquet (latex free) – 2
- IV loop – 1
- 0.9% Normal Saline solution, 250 mL – 1 bag
- 0.9% Normal Saline solution, 1000 mL – 1 bag
- System approved intravenous catheters (self-sheathing, needle-less system)
  - 14 gauge – 2
  - 16 gauge – 2
  - 18 gauge – 2
  - 20 gauge – 2
  - 22 gauge – 1

  - 24 gauge – 1
- Saline lock hubs – 2
- Chlorohexadine prep pads – 5
- Small sharps safety container – 1
- 0.9% sodium chloride vial or prefilled syringe (5 or 10 mL) – 2
- Tegaderm – 2
- Venigard – 2

Sterile Syringes

- 3 cc safety syringe with needle – 2
- 12cc safety syringe without needle – 2

Mucosal Atomization Device - 1

Sterile Needles:

- Assorted sizes (19, 20, 25 gauge) – 1 each

EZIO Driver and associated Adult/Pedi and Bariatric size Needles and Supplies -1 set

----------Optional Equipment /Medications----------

Emesis bags/containers - 2

Initial System Credentialing Check List

System Responder:

- ❑ Current affiliation with a Tier 1 or Tier 2 System OMD Registered Organization or Transport Provider.
- ❑ Current DSHS Certification or Licensure at the ECA level or above.
- ❑ Successfully completed the "System Pit Crew" CPR Education Module and Skill Competency.
- ❑ Successfully completed all other OMD currently designated Mandatory Education Modules.
- ❑ Successfully completed the System Responder Protocol Examination with a grade of 80 or higher.

EMT- B Credentialed Provider or Responder:

- ❑ Current affiliation with a Tier 1 or Tier 2 System OMD Registered Organization or Transport Provider.
- ❑ Current DSHS Certification at the EMT-B level or above.
- ❑ Successfully completed the "System Philosophy of Five" including the "System Pit Crew" CPR Education Module and Skills Competencies.
- ❑ Successfully completed all other OMD currently designated Mandatory Education Modules.
- ❑ Successfully completed the EMT- B Protocol Examination with a grade of 80 or higher.

EMT- I Credentialed Provider or Responder:

- ❑ Current affiliation with a Tier 2 System Registered OMD Organization or Transport Provider.
- ❑ Current affiliation with a DSHS ALS level Licensed Organization.
- ❑ Current DSHS Certification at the EMT- I level or above.
- ❑ Successfully completed the "System Philosophy of Five" including the "System Pit Crew" CPR Education Module and associated Skills Competencies.
- ❑ Successfully completed all other OMD currently designated Mandatory Education Modules.
- ❑ Successfully completed the ILS Protocol Examination with a grade of 80 or higher.
- ❑ Successfully completed the System ILS Credentialing Process, including additional required Skills Competencies.

Initial System Credentialing Check List

EMT- P Credentialed Provider or Responder:

- ❑ Current affiliation with a Tier 2 System Registered OMD Organization or Transport Provider.
- ❑ Current affiliation with a DSHS ALS level Licensed Organization.
- ❑ Current DSHS Certification or Licensure at the EMT- P or LP level.
- ❑ Successfully completed the "System Philosophy of Five" including the "System Pit Crew" CPR Education Module and associated Skills Competencies.
- ❑ Successfully completed all other OMD currently designated Mandatory Education Modules.
- ❑ Successfully completed the ALS Protocol Examination with a grade of 80 or higher.
- ❑ Successfully completed the System ALS Credentialing Process, including additional required Skills Competencies.

EMD Credentialed Provider or Responder:

- ❑ Current National Academy of Emergency Dispatch (NAED) Emergency Medical Dispatch (EMD) certification.
- ❑ Current affiliation with a System OMD Registered Organization or Transport Provider.
- ❑ Current DSHS Certification or Licensure at the EMT-B level or above.
- ❑ Successfully completed all other OMD currently designated Mandatory Education Modules.
- ❑ Successful completion of the current City of Austin/Travis County EMS System EMD Credentialing process

Medical Directive

Standard:

To describe specific clinical changes or update within the ATCEMS System

Purpose:

1. The Medical Directive:
   - Describes specific clinical changes or updates within the System;
   - Is issued by the Office of the Medical Director to designated points of contact within each agency of the System;
   - Is numbered sequentially and designates the specific level of Provider (EMD, System Responder, EMT-B, EMT-I, EMT-P) impacted by the Directive.
   - Is distributed electronically to all agency-defined points of contacts
   - Individual agencies are responsible for disseminating Medical Directives, in a timely manner, to all Credentialed Providers affiliated with the agency.

The Office of the Medical Director

Standard:

Define the roles and responsibilities of the Office of the Medical Director and it's component parts.

Purpose:

By Texas Department of State Health Services and Texas Medical Board regulation, the System Medical Director is responsible for establishing, overseeing and ensuring quality medical care in the prehospital environment.

1. The Office of the Medical Director is responsible for the following components of the ATCEMS System:
   - Development, maintenance and review of the prehospital clinical operating guidelines, including policies and procedures for establishing clinical care on a semiannual basis.
   - Establishing the standards of prehospital care and any required alterations in these standards care under special circumstances.
   - Establishing and maintaining the minimum requirements for credential to practice within the system.
   - Establishing minimum continuing education requirements for credentialed providers within the system.
   - Oversight of the clinical performance of the System's provider organizations.
   - Implement performance improvement policy and procedures.
   - Establish minimum clinical data requirements to be collected for measuring the system performance.
   - Oversight of clinical research initiatives in the prehospital setting.
   - Serve as the clinical liaison to the medical community.
   - Provide oversight of provider safety as it relates infection control and exposure management.

Clinical Operating Guidelines (COG) Exam

Standard:

To establish a standardized process for demonstrating understanding of ATCEMS System patient care protocols, system standards and procedures.

Purpose:

Every provider that is credentialed to practice within the ATCEMS System will successfully pass a protocol exam in order to obtain initial system credentialing. Credentialed Providers must maintain their credential in accordance with the maintenance requirements (including periodic COG testing) defined by the Office of the Medical Director. This policy does not preclude organizations from conducting internal protocol exams, however, the OMD protocol exam results will be the only exam considered for OMD Credential to Practice status.

Application:

1. Following submission of necessary documentation to the Office of the Medical Director (OMD), candidates or organizations will coordinate with the OMD to schedule administration of a Protocol exam at the appropriate level.
2. A minimum score of 80% is required for a candidate to be deemed successful.
3. If subsequent attempts are necessary:
   - A candidate will be afforded no more than a total of six attempts to achieve the minimum score. This is inclusive of any attempts on an exam appropriate for a credentialing level lower than the candidate's originally desired level.
   - Failure to achieve a minimum score of 80% within the first 3 initial attempts will result in the candidate being disqualified from all credentialing processes for a minimum of three months from the date of the last exam attempt.
     - ☐ EMT-B, ILS or ALS candidates that elect to use a third exam attempt to credential at the a lower level (SR/ECA or EMT-B) than initially tested, and are successful, must remain out of any higher level credentialing process for a minimum of 3 months from the date of the third attempt.
   - A candidate that is unsuccessful in his or her initial three attempts shall remain out of the credentialing process for the prescribed 3 month period, and if the candidate is unsuccessful in the subsequent 3 attempts, they will be disqualified from all credentialing processes for a minimum of one year from the date of the last exam attempt.
   - There must be a minimum of 24 hours between attempts.
   - All attempts must be completed within a 30 day period of the initial exam date.
   - Extension of the 30 day exam period requires approval by the Office of the Medical Director.
   - In order to obtain an extension the candidate must adhere to the following:
     1. The candidate must submit a written request for extension of the 30 day period. The request must include justification for the extension and request for a specific exam date.
     2. The request must be received on or before the end of the 30 day exam period and include signatures from the candidate and the organization's Training Coordinator, Chief Officer or FRO Administrator and an OMD staff member.
     3. Failure to submit the request for extension as described, or to abide by the terms of the extension, will result in the Candidate being disqualified from that or any other credentialing process for a minimum of three (3) months from the date of the last exam attempt.

4. A candidate that is unsuccessful in the exam process, or is disqualified from the process for failing to abide by the requirements related to extending the 30 day exam period, but that is already credentialed in the System will retain his or her current credential level.
5. Should a protocol revision occur within a candidate's 30 day exam period, the version of the protocols in effect at the time of the first exam will be the basis for all exam attempts.
6. Should an approved request for extension of the 30 day exam period be in place; the version of the protocol in effect on the date testing resumes will be the basis for subsequent exam attempts, regardless of attempt number or level.
7. If it is determined that a candidate has cheated during a protocol exam the Medical Director may suspend or revoke the candidates current credential and/or bar the candidate from the credentialing process for a minimum of 1 year.
8. In all events where there is dispute or discrepancy the OMD reserves the right of final decision for disposition of the protocol testing procedures and processes.
9. For ILS and ALS candidates, upon successful completion of the protocol exam and any required educational session (s), the OMD will issue the appropriate OMD transitional badge in accordance with the Identification Badges Standard.
    - An OMD transitional badge extends the privilege to practice at the desired credential level provided the candidate is in the presence of a designated System Training Officer/Preceptor who is Credentialed at the candidates desired Credentialing level or above.

Protocol Committee

Standard:

Establish a uniform process for review and implementation of System-wide Protocols for patient care.

Pupose:

The Protocol Committee is a standing committee charged by the Office of the Medical Director to review and make recommendations for changes in the clinical practice and protocols for patient care within the system.

Application:

1. Review requests for new protocols to be implemented.
2. Review requests for changes to the current clinical practice and protocols.
3. Review of current clinical practice and protocols.
4. Coordinate with the Clinical Equipment Committee to evaluate/trial/research/investigate new medications and/or equipment recommended for use in the System.
5. Recommend an appropriate timeline for System implementation.
6. Consult with System Performance Management to define applicable performance management benchmarks or measures.
7. Consult in the development of System education related to implementation of new protocols.
8. Review, in conjunction with Physician Medical Director, on a biannual basis for possible revisions or additions.
9. Provide regular reports and recommendations to the System Medical Director.

Clinical Change Process

Standard:

Request for changes to clinical practice of medicine will be submitted to the Office of the Medical Director for review. Requests will be assigned by the Office of the Medical Director to the System Equipment and Medication Committee, Protocol Committee, or other established committee as appropriate for the recommended change. The respective committee's will review requests and will make recommendations to the Medical Director based on their respective review.

Purpose:

To establish a standardized process for ATCEMS System Provider's to request a consideration of changes to the Systems clinical practice of medicine.

Texas Administrative Code:Title 25, Part 1, Chapter 157, Subchapter B Rule 157.11 (f) "The protocols shall address the use of all required, additional, and specialized medical equipment carried by any EMS vehicle in the provider's fleet." (g) "Equipment and supplies: The provider shall submit an equipment and supply list which is approved by the medical director and which is consistent with, and fully supportive of, the protocols." And, for System registered FROs': Rule 157.14 (E) (ii) "response, dispatch and treatment protocols including an equipment and supply list approved by the medical director of the licensed EMS provider."

Application:

1. System providers should have authorization from their respective Organization's to submit new ideas for clinical changes.
2. Complete the Office of the Medical Director questionnaire for proposed change;
3. Submit the completed form and any supporting documentation to the Office of the Medical Director;
4. The appropriate committee will review the information and make a recommendation to the Medical Director;
5. The Medical Director may accept or reject the proposal, may request additional information or may modify the proposed changes to meet the needs of the System.

Questionnaire for proposed Medication or Equipment for Evaluation or Trial or Implementation

Summary Statement including:

1. What problem or issue does this address?
2. What is the current Process/Method/Equipment/Medication?
3. How does this proposed solution improve the current Process/Method/Equipment/Medication?
4. What are you requesting done? (i.e. non patient evaluation or patient trial etc.)

Impact Statement including:

1. Who does this impact:
    a. Which Organization (s)
    b. Which Provider Credential Level (s)
2. Education:
    a. Delivery Format (in person lecture, DVD, Web based, hands on)
    b. Who delivers this education (OMD, each organization, other)
    c. Comprehension tool (written testing, skills proficiency)
3. Does this require a COG change?
4. Cost of this (budgeted or new expense)?

Please provide Specifications/Literature/Vendor information:

Primary Point (s) of Contact for this Questionnaire:

Print Name:	Organization:	Phone #	E-mail Address:

Answer this questionnaire as completely as possible; use additional sheets/documents as needed. This page **must** be the cover sheet. Route or Fax it to the OMD. The OMD will consolidate and provide them to the System Equipment and Medication Committee at the next scheduled meeting. Document received at the OMD on:_____.

For additional information and process flow chart refer to OMD Reference OMDR - 18

Clinical Change Process

Action Requested:	Requested By:
	❑ Requested by: Date: ❑ Agency Involved: Date: ❑ If Trial or Evaluation specify Dates: from_____to_____ ❑ Trial or Evaluation Coordinator:
Items To Be Added:	**Comments / Rational:**

Additional Comments or Web Address for additional information:

Final Approval Signatures (must be signed by both parties):

Chair, System Equipment and Medications Committee: print name:_____

Sign:_____ Date: _____

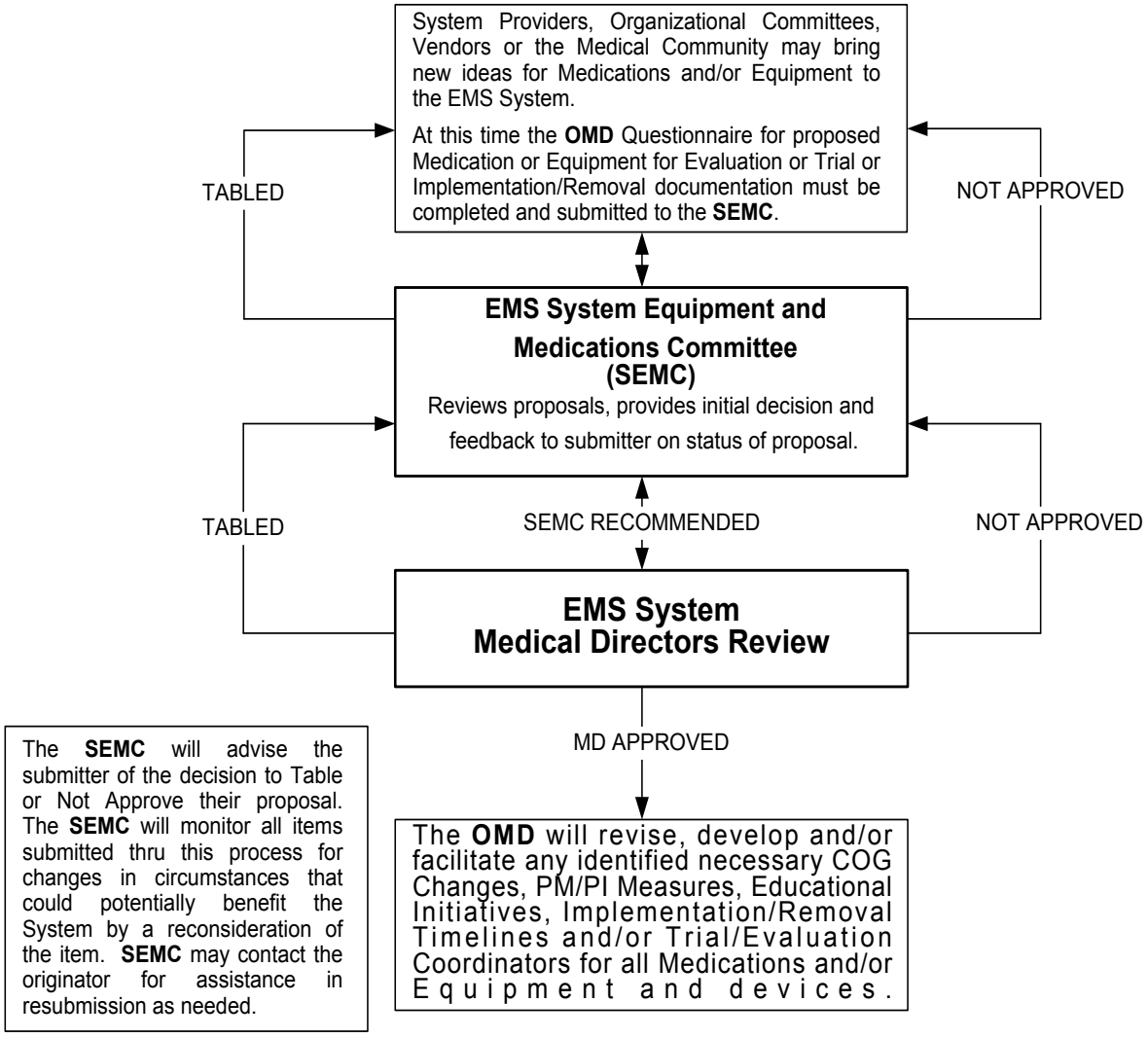
Medical Director, City of Austin/Travis County EMS System:_____

Sign:_____ Date: _____

Authorization to modify Medical Supply and Equipment List
(Medical Director must check or initial box to authorize)

☐ In accordance to the requests/decisions of the above groups, the signature of the EMS Medical Director (or in his absence, his designee) on this form duly authorizes the OMD Staff to revise the *Medical Supplies and Equipment List for Suburban First Responder Organizations* when required and applicable.

EMS System Clinical Practice Change Process for Medications and Equipment



System Registered Organizations

Tier 2 Designated Organizations

ESD 1 – North Lake Travis Fire Rescue
ESD 2 – Pflugerville Fire Department
ESD 3 – Oak Hill Fire Department
ESD 4 – Travis County Fire Control
ESD 5 – Manchaca Fire Department
ESD 6 – Lake Travis Fire Rescue
ESD 8 – Pedernales Fire Department
ESD 9 – Westlake Fire Department
ESD 10 – CE-BAR Fire Department
ESD 11 – Travis County Fire and Rescue
ESD 12 – Manor Fire Department
ESD 14 – Volente Fire Department

- Travis County Search and Rescue
- City of Austin-Travis County EMS Department
- Travis County Parks
- City of Austin Fire Department

Tier 1 Designated Organizations

- One Texas Center Emergency Response Team
- 3M Austin Center and Research
- Flextronics
- Texas Department of State Health Services
- City of Austin HSEM
- Bastrop/Travis Counties ESD 1 (BAT1)
- ARL UT Emergency Team
- Dell Computer Company
- Texas Comptroller of Public Accounts
- Winters Medical Assistance Team
- Texas Department of Public Safety (DPSLEA) Austin Texas

System Reintegration Timelines

Purpose

System credentialed providers are required to "reintegrate" following an event or Organizational action causing a reassignment or, an extended absence from providing patient care (CS – 25). The purpose of the reintegration process is to ensure that the provider has a smooth transition back to independent duty after returning from a leave of absence, OJI, FMLA, reassignments, military duty etc. This period of review and/or observation ensures that the returning provider has clinical knowledge and skills proficiency commensurate with that of the other credentialed providers in the System.

Policy Text

Upon return from any type of leave of absence, the System Organization will determine the exact number of days the provider has been absent. The organization will notify The Office of the Medical Director of any individual returning to duty if their reassignment or absence was greater than 30 consecutive days. The Provider will be required to complete certain credentialing requirements prior to returning to full independent patient care duty status. These requirements will be determined based on the number of days the provider was absent and the credential level of the provider. Providers seeking to reintegrate their Credentials must do so with a System Organization holding the same or higher OMD designated "Tier Level". With the exception of System Responder, Providers may (with the support of their Organization) choose to reintegrate at lower Credentialing levels than they currently hold. These requirements are as follows:

> 30 days and ≤ 90 days (All Credential Levels):

- Verification of current State Certification by System Organization
- Verification of current mandatory certifications by System Organization
- Verification and Completion of all missed OMD required training, including Continuing Education, Skills Competency, Clinical Operating Guidelines changes and Current Version of COG Test on file with the OMD.

> 90 days (All Credentialed System Responders (ECA) and EMT – B Providers):

- Verification of current State Certification by System Organization
- Verification of current mandatory certifications by System Organization
- Verification and Completion of all missed OMD required training, including Continuing Education, Skills Competency, Clinical Operating Guidelines changes and Current version of COG Test on file with the OMD.
- Credentialed Transport Providers, completion of all additional Organizational and Clinical Modules as approved by the OMD.

> 90 days and ≤ 180 days (All Credentialed ILS and ALS Providers):

- Verification of current State Certification by System Organization
- Verification of current mandatory certifications by System Organization
- Verification and Completion of all missed OMD required training, including Continuing Education, Skills Competency, Clinical Operating Guidelines changes and Current version of COG Test on file with the OMD.
- First Response ILS/ALS Credentialed Providers, all OMD required Skills verified by SCP.
- Credentialed Transport Providers, completion of all additional Organizational and Clinical Modules as approved by the OMD.

> 180 days (All Credentialed ILS and ALS Providers):

- Verification of current State Certification by System Organization
- Verification of current mandatory certifications by System Organization
- Verification and Completion of all missed OMD required training, including Continuing Education, Skills Competency, Clinical Operating Guidelines changes and Current version of COG Test on file with the OMD.
- First Response ILS Credentialed Providers, all OMD required Skills verified by SCP and System Medical Director Assessment Scenarios.
- All ALS Credentialed Providers/Responders Medical Director interview.
- Credentialed First Response ALS and ALS Transport Providers, completion of all additional Organizational and Clinical Modules as approved by the OMD.

Process:

Providers who wish to re-credential should contact the OMD to create their reintegration plan based on the time parameters described above. If the reintegration process requires supervised practice the provider will be granted a modified credential for the purpose of reintegration. In the event that a provider is not successful in the initial reintegration process they will be assigned a remediation plan addressing any identified deficiencies. Continued failure to successfully complete the reintegration process may result in revocation of the credential to practice in accordance with Clinical Standard CS-29.

System "Clinical Laboratory Improvement Amendment" (CLIA) Certificate of Waver

Standard:

To make provision to continue to hold the CLIA Waver for the System.

Purpose:

To describe specific requirements for compliance with the CLIA Waver.

Process:

On May 15, 2005 the OMD was awarded and now maintains the System's "Clinical Laboratory Improvement Amendment" (CLIA) Certificate of Waver. The device that this certificate covers for the System is our Blood Glucose Meters. The waver we hold requires that each meter in the System is tested at least once per year. Meter testing is to be conducted in accordance with the manufactures standards per the testing instructions and supplies that come with each meter.

In response to this requirement each System Organization will send us summary notification as requested but, no less than on an annual basis verifying that all of their meters have been tested.

Quick Reference Cards 4" x 6"
Checklists
Fluid Drip Charts
Medication Infusion Tables

Version 020415 (MD 14-09)

Stroke Checklist:

- ❑ Time patient "last known well" ≤ 8 hrs
- ❑ Blood glucose >50
- ❑ Cincinnati Prehospital Stroke Screen (CPSS):
  - ⇨ Facial droop
  - ⇨ Arm drift
  - ⇨ Slurred speech
- ❑ Declare STROKE ALERT
- ❑ ID family/historian to accompany
- ❑ Scene time < 15 min

Restraints Checklist:

- ❑ All other calming attempts have failed
- ❑ Adequate personnel to effect restraint (PD preferred)
- ❑ After restraint placed in supine position
- ❑ PD immediately available if handcuffed
- ❑ EMS personnel in constant attendance
- ❑ Chemical sedation administered
- ❑ Continuous SaO2, ETCO2, Monitor
- ❑ Continuous assessment of neurovascular status
- ❑ Adequate personnel for transport
- ❑ Excited Delirium considered
- ❑ Documentation:
  - ⇨ Efforts prior to restraint
  - ⇨ Time of restraint
  - ⇨ Chemical sedation
  - ⇨ Continuous monitoring
  - ⇨ PMS evaluation

Refusal of Care/Treatment Checklist:

- ❑ Pt is ≥ 18 or emancipated minor
- ❑ Pt is not suicidal/homicidal
- ❑ Pt demonstrates capacity
- ❑ Pt understands evaluation is incomplete
- ❑ Solutions to obstacles have been sought
- ❑ Pt instructed to seek medical attention
- ❑ Pt instructed to call back at any time
- ❑ Above documented fully in PCR
- ❑ In the following high risk situations contact with Medical Control is recommended:
  - ⇒ Age greater than 65?
  - ⇒ Pulse greater than 110 or less than 60?
  - ⇒ Systolic BP greater than 200 or less than 90?
  - ⇒ Respirations greater than 30 or less than 12?
  - ⇒ Serious chief complaint (chest pain, SOB, syncope)
  - ⇒ Significant MOI or high suspicion if injury?
  - ⇒ If it is your impression the patient requires hospital evaluation?

These 2 sections should be kept together and/or laminated back to back

Capacity Checklist:

- ❑ Patient is able to express in their own words:
  - ⇒ An understanding of the nature of their illness
  - ⇒ An understanding of the risks of refusal including death
  - ⇒ An understanding of alternatives to EMS treatment/transport
  - ⇒ Pt can provide rationale for refusal and debate this rationale
- ❑ A patient with any of the following **MAY** lack decision making capacity and should be carefully assessed for their ability to perform the above.
  - ⇒ Orientation to person, place or time that differs from baseline
  - ⇒ History of drug/alcohol ingestion with appreciable impairment such as slurred speech or unsteady gait
  - ⇒ Head injury with LOC, amnesia, repetitive questioning
  - ⇒ Medical condition such as hypovolemia, hypoxia, metabolic emergencies (e.g., diabetic issues); hypothermia, hyperthermia, etc.
- ❑ If any question exists about their capacity contact Medical Control

Perform a Rapid 12 Lead on any patient ≥ 30 years old with the following:

- Suspected cardiac patient
  - ⇨ Pain between navel and jaw
  - ⇨ Pressure, discomfort, tightness or heartburn
  - ⇨ "Heart racing", "palpitations", or "heart too slow"
  - ⇨ CHF signs and symptoms
- Electrical injuries
- Syncope
- Severe Weakness
- New onset stroke symptoms
- Difficulty breathing (no obvious respiratory cause)
- Suspected overdose

Patient of any age with any of the above symptoms **AND** history of: (cardiac, diabetes, obese, family history of early CHD, or recent cocaine use)

If the patient meets any of the above criteria: EMT providers are to attach ECG electrodes ASAP and ALS providers are to obtain a 12 lead ECG within 5 minutes of ALS patient contact. Transmit 12 Lead ASAP if STEMI.

Post Resuscitation Checklist:

- ❑ ITD Removed
- ❑ Lucas Device “pressure pad” released and retracted
- ❑ Oxygen titrated to >94 < 100%
- ❑ Fluids and Levophed for MAP ≥ 65
- ❑ 12-Lead EKG & Transmit
- ❑ Resuscitation Alert/STEMI Alert Declared
- ❑ Continuous ETCO2 monitoring
- ❑ Controlled Ventilation < 12 bpm
- ❑ Adequate personnel for transport
- ❑ Airway placement confirmed with each move
- ❑ Consider Criteria for Induced Hypothermia

Pediatric Lidocaine Infusion

Range of Infusion 20-50 mcg/kg/min

Step 1
Determine Concentration

Lidocaine Concentration: 20mg/1mL
Mix 2mL (40 mg) Lidocaine in 50 mL NS (must use 60 drop set)

Step 2
Determine Rate

Dose in mcg/kg/min	Weight in Kg							
	3 kg	4kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg
20 mcg (drops/min)	5	6	8	10	13	16	20	25
30 mcg (drops/min)	7	9	11	15	19	24	29	37
40 mcg (drops/min)	9	12	15	20	26	32	39	50
50 mcg (drops/min)	11	15	19	24	32	39	49	62

	19-23 kg	24-29 kg	30-36 kg
20 mcg (drops/min)	32	40	50
30 mcg (drops/min)	47	60	74
40 mcg (drops/min)	63	80	99
50 mcg (drops/min)	79	99	124

Pediatric Epinephrine Infusion for IV use

Range of infusion 0.1-1.0 mcg/kg/min

Step 1
Determine Concentration

Concentration of Epi: 1mg/1mL

must use 60 drop set

Pt Weight in kg	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg
mL of Epi into 250mL bag	0.2 mL	0.3 mL	0.4mL	0.5mL	0.7 mL	0.8 mL

Pt Weight in kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
mL of Epi into 250mL bag	1 mL	1.3 mL	1.7 mL	2 mL	2.6 mL

Calculation based on (Pt weight in kg x 0.08) = mL Epi into 250 mL NS

Step 2
Determine Rate

Dose in mcg/kg/min	0.1	0.2	0.3	0.5	0.7	0.8	0.9	1
Drops/minute	19	38	56	94	131	150	169	188

Pediatric Cardioversion and Defibrillation Dose Chart

Determine Joule Dose:

# of Joules x Kg weight = Dose setting for electrical therapy:

	3 kgs	4kgs	5 kgs	6-7 kgs	8-9 kgs	10-11 kgs	12-14 kgs	15-18 kgs	19-23 kgs	24-29 kgs	30-36 kgs
	6.6 lbs	8.8 lbs	11 lbs	13-15 lbs	17-20 lbs	22-24 lbs	26-30 lbs	33-40 lbs	42-50 lbs	53-64 lbs	66-80 lbs
	In18.25-20.25	In20.25-21.5	In21.5-23.25	In23.25-26.25	In26.25-29.25	In29.25-33	In33-37.5	In37.5-42.5	In42.5-47.75	In47.75-51.25	In51.25-56.25
Cardioversion 0.5 j	1j	2j	2j	3j	4j	5j	7j	8j	10j	15j	15j
Cardioversion 1.0 j	3j	4j	5j	6j	8j	10j	15j	15j	20j	30j	30j
Cardioversion --OR-- Defibrillation 2.0j	6j	8j	10j	15j	15j	20j	30j	30j	50j	50j	70j
Defibrillation 4.0j	10j	15j	20j	30j	30j	50j	50j	70j	85j	100j	120j

1. Verify joule dose for appropriate age as per each individual protocol.
2. Use the PEDIATAPE to estimate weight, and the Color Coded List to verify correct joule dose for weight range.
3. If all verifications are correct, and your partner agrees, administer the appropriate joule dose as per the chart above.
4. Select the next higher length color zone for obese children.

** This reference may include "rounding" of joule doses for weight ranges, safety and available Monitor Joule settings **

Parkland Burn Formula

Pt weight		3kg	5kg	7kg	9kg	11kg	13kg	15kg	17kg	19kg	21kg	23kg	25kg	27kg
%	10%	8	13	18	23	28	33	38	43	48	53	58	63	68
	20%	15	25	35	45	55	65	75	85	95	105	115	125	135
	30%	23	38	53	68	83	98	113	128	143	158	173	188	203
	40%	30	50	70	90	110	130	150	170	190	210	230	250	270
	50%	38	63	88	112	138	163	188	213	238	263	288	313	388
	60%	45	75	105	135	165	195	225	255	285	315	345	375	405
	70%	53	88	123	158	193	228	263	298	333	368	403	438	473
	80%	60	100	140	180	220	260	300	340	380	420	460	500	540
	90%	68	113	158	203	248	293	338	383	428	473	518	563	608
	100%	75	125	175	225	275	325	375	425	475	525	575	625	675

Fluid quantity is amount (in mL's) to be infused during the first hour after injury

This infusion chart should be kept together and/or laminated back to back

Parkland Burn Formula Continued

Pt weight (kg)		30kg	35kg	40kg	45kg	50kg	55kg	60kg	70kg	80kg	90kg	100kg	110kg	120kg
% BSA	10%	75	88	100	113	125	138	150	175	200	225	250	275	300
	20%	150	175	200	225	250	275	300	350	400	450	500	550	600
	30%	225	263	300	338	375	413	450	525	600	675	750	825	900
	40%	300	350	400	450	500	550	600	700	800	900	1000	1100	1200
	50%	375	438	500	563	625	688	750	875	1000	1125	1250	1375	1500
	60%	450	525	600	675	750	825	900	1050	1200	1350	1500	1650	1800
	70%	525	613	700	788	875	963	1050	1225	1400	1575	1750	1925	2100
	80%	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400
	90%	675	788	900	1013	1125	1238	1350	1575	1800	2025	2250	2475	2700
	100%	750	875	1000	1125	1250	1375	1500	1750	2000	2250	2500	2750	3000

Fluid quantity is amount (in mL's) to be infused during the first hour after injury

OFFICE OF THE MEDICAL DIRECTOR
CITY OF AUSTIN/TRAVIS COUNTY EMS SYSTEM

Medication Check

SAFETY TOOL

PROVIDER 1 Giving and/or Preparing	PROVIDER 2 Verifying
Request: **"Medication Check"**	**"Ready"**
"I am going to give" • ***Drug name*** • ***Dose*** • ***Route*** • ***Rate*** • ***Exp. Date*** • ***PT Weight*** • ***Reason/Indication***	*If concurrence on all 7, ask:* **"Are there contraindications?"**
State and discuss relative contraindications. If none, state: **"No contraindications"**	*If concurrence, ask:* **"What is your volume?"** or **"quantity"** for pills/tablets
State **volume in mL** State **concentration** Show container	*Only if positive identification and agreement on all, state:* **"I agree; give it"**

Adapted with permission from
Wichita-Sedgwick County EMS System

MEDICAL ARREST: Termination of Resuscitation without OLMC Checklist:

- ❑ Pt ≥ 18 yoa or family of minor is agreeable (consult Commander/DMO)
- ❑ Adequate CPR has been administered
- ❑ Airway managed with ET, BIAD, Cric
- ❑ IV/IO Access has been achieved
- ❑ Rhythm appropriate meds/treatment administered
- ❑ Persistent (>20 min) Asystole/Agonal rhythm with no reversible causes
- ❑ Failure to establish ROSC at any time
- ❑ Failure to establish recurring/persistent v-fib
- ❑ Arrest not due to suspected hypothermia
- ❑ Providers agree with decision to cease efforts

If all of the above are not met contact an on call System Medical Director for termination of efforts.

TRAUMATIC ARREST: Termination/withholding of Resuscitation Checklist:

- ❑ Obvious injuries incompatible with life and/or obvious signs of organ destruction
- ❑ Pt is pulseless and apneic on arrival of first Provider **AND**
- ❑ Lacks respiratory effort after basic airway maneuvers **AND**
- ❑ Organized electrical activity on ECG w/ rate (less than) < 40.
- ❑ Medical cause of arrest has been considered.

Induced Hypothermia Checklist:

Meets criteria for induction: ROSC (and)

- ⇨ ≥ 37 Kg
- ⇨ Non-traumatic cause
- ⇨ No suspected hemorrhagic cause
- ⇨ Temp > 34 C (93.2 F)
- ⇨ Unable to follow commands

- ❑ ITD removed
- ❑ If Lucas used release/retract "pressure pad"
- ❑ Airway confirmed with each move
- ❑ Oxygen titrated to >95 < 100%
- ❑ Continuous ETCO2
- ❑ 12-Lead ECG If STEMI Trans. 12Lead
- ❑ Resuscitation Alert/STEMI Alert Declared
- ❑ Versed/Vecuronium if not hypotensive (advanced airway only)
- ❑ Cold fluids/Levophed MAP ≥ 65
- ❑ Ice packs applied to neck, axilla, groin
- ❑ Cold saline infused 30ml/kg max 2L
- ❑ Controlled Ventilation < 12 bpm
- ❑ Adequate personnel for transport
- ❑ If loss of ROSC go to appropriate Protocol

GCS:

Eyes Open

- ❑ Spontaneous (4)
- ❑ To Voice (3)
- ❑ To pain (2)
- ❑ None (1)

Best Verbal

- ❑ Oriented (5)
- ❑ Confused (4)
- ❑ Inappropriate (3)
- ❑ Garbled (2)
- ❑ None (1)

Best Motor

- ❑ Obeys (6)
- ❑ Pain-Local (5)
- ❑ Pain withdrawal (4)
- ❑ Pain-Flexion (3)
- ❑ Pain-Extended (2)
- ❑ None (1)

First Responder Cardiac Arrest Checklist:

- ❑ Pt moved to adequate working area
- ❑ Communications advised CPR in progress
- ❑ Pit crew positions identified
- ❑ Continuous compressions being performed
- ❑ ITD in place w/light activated
- ❑ BVM is attached to oxygen and flowing
- ❑ AED Applied
- ❑ Sufficient personnel or additional requested

Double Sequential External Defibrillation Checklist:

- ❑ ALS Cardiac Arrest Checklist Completed
- ❑ ≥ 5 shocks delivered (incl. AED shocks) **AND,**
- ❑ Administered 450mg Amiodarone **AND,**
- ❑ V-fib/pulseless V-tach NEVER converted
- ❑ Appropriately position additional set of Defibrillation Pads on patient
- ❑ Position 2nd Monitor for optimum access by Code Commander
- ❑ Select Maximum Energy settings for both Monitors
- ❑ Charge both monitors 15 seconds in advance of anticipated 2 minute break in CPR
- ❑ Evaluate patient's rhythm <10 seconds
- ❑ If shock indicated verbally/visibly clear patient and DSED by pressing both shock buttons simultaneously
- ❑ Immediately resume CPR and reassess patient after 2 minutes
- ❑ Continue Medication/DSED treatments cycle per Protocol CA-06

CHF Checklist:

- ❑ Absence of fever
- ❑ Oxygen
- ❑ CPAP
- ❑ NTG for HTN
- ❑ Levophed & Fluids for hypotension
- ❑ MI Considered
  - ⇨ 12-Lead & Transmit ECG
  - ⇨ ASA

Suspected Cardiac Chest Pain Checklist:

- ❑ Rapid ECG criteria/acquisition
- ❑ ASA (if not allergic) chewed
- ❑ Oxygen titrated >95% <100%
- ❑ IF STEMI:
  - ⇨ Symptomatic and ≥ 1 mm ST elevation in 2 contiguous leads and no STEMI Alert exclusions (CS – 33)
  - ⇨ Immediate packaging/transport
  - ⇨ Declare STEMI Alert & Transmit 12 Lead ASAP
  - ⇨ Defer additional treatment until enroute
- ❑ NTG SL and paste if:
  - ⇨ SBP >100
  - ⇨ No allergies to NTG
  - ⇨ No Viagra/Levitra last 24 hrs
  - ⇨ No Cialis last 48 hrs
  - ⇨ IV as time permits
- ❑ Fentanyl for persistent pain
- ❑ Contact receiving facility **via radio preferred** - via phone if radio not working

Asthma Checklist:

- ❑ ETCO2, Pulse Ox, Cardiac Monitor
- ❑ Albuterol/Atrovent Administered
- ❑ CPAP @ 5 cm H2O with Albuterol
- ❑ Consider Magnesium if refractory

	Sign	0 Points	1 Point	2 Points
A	***Appearance*** **(Skin Color)**	Blue-gray, pale all over	Pink except for extremities	Pink over entire body
P	***Pulse***	Absent	<100/min	>100/min
G	***Grimace*** **(Reflex Irritability)**	No response to stimuli	Grimaces in response to stimuli	Sneezes, coughs, pulls away
A	***Activity*** **(Muscle Tone)**	Absent, flaccid	Arms and legs flexed	Active movement
R	***Respiration***	Absent	Slow, irregular	Good, crying

1 Minute		***5 Minutes***
_____	⇒ 10 Infant is in best possible condition	_____
_____	⇒ 7-9 Infant is slightly depressed but near normal	_____
_____		_____
_____	⇒ 4-6 Infant is moderately depressed	_____
_____		_____
*Total*_____	⇒ 0-3 Infant is severely depressed	*Total*_____

ALS Cardiac Arrest Checklist:

- ❑ Pit crew positions identified
- ❑ Continuous compressions being performed
- ❑ ITD in place w/light activated
- ❑ BVM is attached to oxygen and flowing
- ❑ Monitor visible and in paddles mode
- ❑ BVM mask attached to tubing if not being used
- ❑ ETCO2 waveform is present and being monitored
- ❑ IV/IO access has been obtained
- ❑ Gastric distention has been considered/addressed
- ❑ Family is receiving care and is at the patient's side
- ❑ Code Commander is identified and positioned at the monitor

❑ Hypovolemia	❑ Tablets/Toxins
❑ Hypoxia	❑ Tamponade
❑ Hydrogen ions (acidosis)	❑ Tension Pneumothorax
❑ Hypothermia	❑ Thrombosis (MI)
❑ Hyper/hypokalemia	❑ Thrombosis (PE)
❑ Hypoglycemia	❑ Trauma

Adult Norepinephrine (Levophed) Infusion

Range of Infusion 2 - 12 mcg/min

Titrate to MAP ≥ 65

Step 1
Determine concentration

Mix 4 mg Levophed into 250 mL N/S (must use 60 drop set)
Concentration = 16mcg/1mL

Step 2
Determine Rate

Dose	2mcg/min	3mcg/min	4mcg/min	5mcg/min	6mcg/min	7mcg/min	8mcg/min	9mcg/min	10mcg/min	11mcg/min	12mcg/min
tts/min	8	11	15	19	22	26	30	34	38	41	45

Drips requiring OLMC

Adult Epinephrine Drip

Dose is 2-10 mcg/min

Step 1

Determine Concentration

Mix 2 mg of Epinephrine 1:1,000 in 250 mL NS (must use 60 drop set) (concentration is 8mcg/ml)

Step 2
Determine Rate

	Dose in mcg/min							
	2	**3**	**4**	**5**	**7**	**8**	**9**	**10**
Drops /min	**15**	**22**	**30**	**37**	**52**	**60**	**67**	**75**

Adult Amiodarone Infusion

Infuse 150 mg over 10 minutes

For VT, WCT of unknown origin and pre-excited A-fib (A-fib with WPW)

Step 1
Determine Concentration

Mix 150 mg in 50 mL NS (using 60 drop set)

Step 2
Determine Rate

Rate is drops per minute using a 60 drop set

Dose in ml/min	
50 mL / 10 min	300 Drops/ minute

Drips requiring OLMC

Adult Amiodarone Drip

Dose is 0.5-1 mg/min

Step 1

Determine Concentration

Mix 90 mg (1.8 mL) of Amiodarone in 50 mL NS (must use 60 drop set)

Step 2
Determine Rate

	Dose in mg/min		
	0.5	0.75	1
Drops/ minute	17	25	33

*** Amiodarone is stable for only 2 hours when mixed in a plastic IV bag**

ALS Cardiac Arrest

- □ Pit crew pos. ID'd
- □ Code Com. At Monitor
- □ Continuous Compressions with Metronome
- □ O_2 flowing and attached to BVM
- □ ITD in place, Light on
- □ $EtCO_2$ waveform present
- □ Monitor in Paddles Mode
- □ IV/IO Access
- □ Consider Gastric Distension
- □ Family Receiving Care & at pt side
- □ Consider Reversible Causes (See Reverse)
- □ BVM mask on O_2 tubing if not in use

Reversible Causes

- □ Hypovolemia
- □ Hypoxia
- □ Hydrogen Ions (acidosis)
- □ Hypothermia
- □ Hyper/hypokalemia
- □ Hypoglycemia
- □ Tablets/Toxins
- □ Tamponade
- □ Tension Pneumo
- □ Thrombosis (MI)
- □ Thrombosis (PE)
- □ Trauma

Post Resuscitation

- □ ITD Removed
- □ Controlled Ventilation <12 bpm
- □ O_2 titrated 95-99%
- □ Fluids/Levophed as needed to MAP ≥ 65
- □ Consider induced hypothermia (see reverse)
- □ 12-lead EKG & Transmit
- □ Adequate personnel for transport?

Call Resuscitation / STEMI Alert on radio if needed

- □ Confirm airway with each move

Hypothermia

- □ Meets Hypothermia Criteria
  - □ ≥ 37 Kg
  - □ Non-traumatic cause
  - □ No suspected hemorrhagic cause
  - □ Temp > 34C (93.2F)
  - □ Doesn't follow commands
- □ Cold Saline infusion 30 ml/kg max 2L
- □ Ice packs to neck, axilla, groin
- □ Versed/Vecuronium if not hypotensive
  - □ Versed: 5 mg
  - □ Vec: 0.1mg/kg max 10mg

Medical TOR

- □ Pt ≥18 yoa or family agreeable (consult commander/DMO)
- □ Adequate CPR
- □ ET, BIAD, or Cric Present
- □ IV/IO Access Present
- □ Appropriate meds/therapy administered for rhythm
- □ >20 min Asystole/Agonal rhythm
- □ No reversible causes
- □ No ROSC at any time
- □ No recurring/persistent V-fib
- □ No suspected hypothermia
- □ All providers agree with decision to terminate

ALL criteria above must be met–otherwise contact System MD for termination

Trauma TOR

- □ Obvious injuries incompatible with life and/or obvious signs of organ destruction
- □ Pt is pulseless/apneic on arrival of first provider AND
- □ No resp. effort after basic airway maneuvers AND
- □ Organized electrical activity on ECG w/ rate (less than) < 40
- □ Medical cause of arrest has been considered

Chest Pain Checklist

- □ ASA chewed by pt?
- □ Pt meet Rapid 12-lead Criteria?
- □ Transmit 12 Lead ECG
- □ Radio Declaration, if STEMI:
  - o Symptomatic and;
  - o ≥1 mm ST-elevation in 2 contiguous leads, and
  - o No STEMI Alert exclusions

Move to Unit and Begin Txprt

See Reverse of Card

Enroute:

- □ Maintain SpO_2 95-99%
- □ Manage Pain (NTG/Narcs)
  - o Allergy/ED med use?
- □ Contact Receiving Hospital
- □ Via radio preferred
- □ Via phone if radio not working
- □ IV access if time permits

Exclusions for STEMI Alert

- □ LBBB
- □ LVH (S in V1 + R in V5 or V6) ≥ 35
- □ Isolated V1 – V2 elevation only
- □ Early Repolarization
- □ Diffuse ST Elevation
- □ Ventricular / Ventricular Paced

Rapid 12-lead Criteria

Any Patient ≥ 30 yrs with:

- o Pain between navel and jaw
- o Pressure, discomfort, tightness, or heartburn
- o Heart racing, palpitations, or heart "too slow"
- o Syncope
- o Severe Weakness
- o Difficulty Breathing (no obvious respiratory cause)
- o Suspected OD

OR pt of any age with any of above symptoms AND history (cardiac, diabetes, obese, fam. Hx early CHD, Recent Cocaine use)

If the patient meets any of the above criteria: EMT providers are to attach ECG electrodes ASAP and ALS providers are to obtain a 12 lead ECG within 5 minutes of ALS patient contact. Transmit 12lead ASAP

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