

TEXAS A&M UNIVERSITY



Aggies Helping Aggies Since 1978

Standard Delegated Orders
February 2011

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Date	Protocol Changed	Comment
2/1/2009	APP 15 - CPAP	Added Procedure
2/1/2009	APP 16 – ResQPOD	Added Procedure
2/1/2009	APP 17 – Autovent Ventilator	Added Procedure
2/1/2009	AC 05 – CHF/Pulmonary Edema	Added CPAP
2/1/2009	AE 05 – Near Drowning	Added CPAP
2/1/2009	AR 03, 04, 06	Added CPAP
2/1/2009	PROC 26	Added ResQPOD
2/1/2009	PC 02, 04, 07, 08, 10	Added ResQPOD
2/1/2009	AC 03, 06, 09, 10, 12	Added ResQPOD
2/1/2009	CG 11 – Medical Authorization Levels	Added CPAP, Ventilator, ResQPOD
2/1/2009	CG 27 – Destination Determination	Updated Stroke Destination Criteria
2/1/2009	AM 04 – CVA	Updated Stroke Destination Criteria
2/1/2009	INTRO 02 – Medical Director Statement	New Signature Page with Proper Dates
2/1/2009	CG 32 – EMD Determinanats v12	Updated to version 12
2/1/2009	CG 42 – Inventory Minimums	Updated
2/14/2010	INTRO 02 – Medical Director Statement	New Signature Page with Proper Dates
2/14/2010	CG 11, CG 12, CG 27, CG 30, CG 42	Updated policies; new procedures and meds
2/14/2010	CG 20 & 21 – Consent and Refusals	Added Present Mental Capacity
2/14/2010	PROC 14, 17; MED 15, 23, 25	Added IN route to Procedures & Meds
2/14/2010	AC 03, 10, 12; AM 03, 13; OB 07; PC 07, 08, 10; PM 03, 11, 12	Narcan IN (intranasal) Administration
2/14/2010	AB 03, 04; AC 04, 07-B, 13-B; AM 06, 14; AR 05; AT 06; PB 03, 04; PC 05-B, 11-B; PM 06, 12	Midazolam IN (intranasal) Administration
2/14/2010	PROC 29 – Vascular Access	Updated with EZ-IO procedure: adult & pedi
2/14/2010	MED 37 – Zofran	Added medication
2/14/2010	APP 18 – Induced Hypothermia	Added procedure
2/14/2010	APP 19 – Zoll 12 Lead Transmission	Added procedure
2/14/2010	AC 03, AC 09, AC 10, AC 12	Added Induced Hypothermia Treatment
2/14/2010	AC 02, 08; AE 03, 04; AM 04, 05-A, AM08, 09, 10; OB 02, 03, 04, 05, 08 AT 02, 03, 11; PC 06; PE 03, 04; PM 04, 05-A, 08; PT 02, 05 08	Added Zofran to treatment options
2/14/2010	AC 03, AC 10, AC 12	Changed vasopressin and epinephrine dosages, updated CPR recommendations

	TAMU EMRC-EMS	MEDICAL DIRECTOR STATEMENT	
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All TAMU EMRC personnel practice under the delegated authority of the Medical Director/Medical Authority (MD-1) and must function within the approved guidelines as written in the TAMU EMRC Clinical Policies, Procedures and Standing Delegated Orders. These documents define the expected pre-hospital standard of care for TAMU EMRC personnel. These protocols apply exclusively to TAMU EMRC personnel in the pre-hospital setting who are working under the medical authority of the TAMU EMRC Medical Authority within the established boundaries of Texas A&M University-EMRC System or while responding to calls dispatched by TAMU EMS Communications for TAMU EMS.

The following treatment and procedure protocols are in effect as of this date, February 1, 2011 through January 31, 2013. Personnel must exercise prudent judgment and treat patients appropriately. Each employee of the agency is expected to know and understand these protocols up to their level of authorization and training.

Advanced protocols may be extended to an attendant partner, EMS student, and First Responders who have appropriate documented training on occasions deemed appropriate and under the direct supervision of the protocol Paramedic.



David C. Teller, MD
Medical Director/Medical Authority
Texas A&M University-EMRC

	TAMU EMRC-EMS	MEDICAL DIRECTOR STATEMENT	
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All TAMU EMRC personnel practice under the delegated authority of the Medical Director/Medical Authority (MD-1) and must function within the approved guidelines as written in the TAMU EMRC Clinical Policies, Procedures and Standing Delegated Orders. These documents define the expected pre-hospital standard of care for TAMU EMRC personnel. These protocols apply exclusively to TAMU EMRC personnel in the pre-hospital setting who are working under the medical authority of the TAMU EMRC Medical Authority within the established boundaries of Texas A&M University-EMRC System or while responding to calls dispatched by TAMU EMS Communications for TAMU EMS.

The following treatment and procedure protocols are in effect as of this date, February 14, 2010 through January 31, 2011. Personnel must exercise prudent judgment and treat patients appropriately. Each employee of the agency is expected to know and understand these protocols up to their level of authorization and training.

Advanced protocols may be extended to an attendant partner, EMS student, and First Responders who have appropriate documented training on occasions deemed appropriate and under the direct supervision of the protocol Paramedic.

David C. Teller, MD
Medical Director/Medical Authority
Texas A&M University-EMRC

	TAMU EMRC-EMS	STANDARD OF CARE STATEMENT	
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The public expects a certain level of knowledge and skill from TAMU EMRC personnel. Clinical competence and high standards are vital functions in providing quality pre-hospital emergency medical care to the customers who rely on our services. The general treatment protocols are in this section of the manual. They represent the minimal level of patient care that is to be provided whenever there is a request for service. The specific orders for each patient are found in the Standing Delegated Orders (SDO's). The general guidelines discuss treatment and patient philosophies. TAMU EMRC embraces as fundamental components of its standard of care the following concepts:

- **The emergent patient benefits from early medical interventions**, especially the early and aggressive application of airway establishment and maintenance, early administration of oxygen, early protection of the cervical spine, and early initiation of definitive therapies.
- **The patient defines the emergency.** As EMS personnel you are often called upon to assist with social or psychological problems therefore you should respond as professionally and thoroughly to these as you do for medical or trauma patients. When possible and appropriate, pre-hospital personnel should follow the desires and wishes of patients and their families. TAMU EMRC personnel should be expected to conduct themselves in a professional manner and treat all patients with dignity and respect. Our patients' medical information should be treated in a confidential manner.
- **Your role as EMS personnel is to truly act as the eyes, ears, and hands of the physician.** To successfully do so requires that we educate ourselves beyond first aid procedures and dedicate ourselves to being an integral part of the total health care team. TAMU EMRC personnel are expected to use their knowledge, training, judgment and expertise in pre-hospital care when caring for patients under these standing orders. EMS personnel are not confined to only knowing their responsibilities. They may expand their knowledge to assist Medical Control with overall patient care.

TAMU EMRC personnel's first priority in the field should be safety for themselves, patients and the public. This includes the use of appropriate personal protective equipment. Patients with the most severe, or life threatening, injuries or illness should be treated first, except in the event of a multiple patient scene/mass casualty incident where the field resources are overwhelmed. Every patient contact begins with the ABCs and or CPR as appropriate. Once adequate life support is established, EMS personnel should perform the primary and secondary survey to determine and then treat illness or injury.

Standard of Care is dynamic, changing and improving on a regular basis. It is not possible to produce a written document that addresses every clinical situation or that is perpetually up to date. It is therefore necessary for TAMU EMRC personnel to continuously update their own knowledge and, at times, to rely upon clinical judgment not discussed in the written policy. Compassion for the patient tempered by intellectual honesty should direct TAMU EMRC personnel when applying these protocols to patient care.

	TAMU EMRC-EMS	STANDARD DELEGATED ORDERS AND PROTOCOLS	
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This Manual sets forth Standard Operating Procedures, Policies, and Protocols deemed by TAMU EMRC to be within the acceptable standard of medical care and are the only ones to be utilized by TAMU personnel. It is specifically recognized that there are acceptable variations from these procedures and protocols, which may also satisfy standard of care. Therefore, variations from these procedures and protocols are not necessarily deemed to be outside the standard of care.

These are **assessment-based** protocols, meaning that the provider should arrive at a working differential of what the main problem is with the patient and then select the protocol which best matches that primary differential. Should a patient fall under a given protocol based upon the provider's differential, but not fit the criteria and history requirements to activate the standing orders, EMS personnel shall initiate the most appropriate treatment for the most emergent clinical problem within their respective scope of practice. **Personnel should consult with the on-duty Supervisor ASAP for any additional assistance or support.**

Each patient may be treated with one protocol (for one differential) or with multiple protocols simultaneously (if the provider finds more than one concurrent illness or injury). Should a provider who is treating a patient with more than one simultaneous protocol be faced with choosing among medications or therapies within those protocols that conflict with one another, the following guidelines are to be used to determine which therapy shall prevail:

1. **Treat the problem that is more life threatening first.** Evaluate the problem against the "ABCs" and intervene in the one(s) that affect the airway first, then the one(s) that affect breathing and last the one(s) that affect circulation. For example, if you have a patient who is suffering from cardiac ischemia and pulmonary edema, treat the pulmonary edema ("B") first then the cardiac ischemia ("C").
2. If the above test does not resolve the conflict, treat the problem that is more underlying first. For example, if assessment of the present history indicates that hypertensive crisis caused pulmonary edema, then treat the hypertension first.
3. If a dysrhythmia is to be treated, do so in the following order:
First: Treat heart rate
Second: Treat rhythm
Third: Treat B/P

Note: If hypotension and dysrhythmias are believed to be secondary to low intravascular volume, IV fluid infusion may be used first.

When a patient changes from one algorithm to another algorithm, do not administer more than the maximum total dose of a medication.

EKG Monitoring may be initiated and vascular access may be obtained in any patient at the discretion of the Paramedic. Oxygen may be administered to any patient at any time, but should be administered to maintain a saturation by pulse oximeter of 95% or greater. In addition to those therapies expressly listed in the SDOs, the following medications are available for use on standing order by advanced providers in any cardiac arrest situation where there is evidence that they are indicated:

Naloxone, D25% or D50%, Thiamine

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Categorization of SDOs:

The treatment protocols have been divided into groups for ease of utilization. The categories have been indexed such that any future change in a particular protocol may be performed without difficulty. The format developed facilitates organization and rapid access to the correct protocol for a given situation. The treatment categories are the following:

- Clinical Guidelines
- Adult Behavioral Emergencies
- Adult Cardiac Emergencies
- Adult Environmental Emergencies
- Adult Medical Emergencies
- Adult Respiratory Emergencies
- Adult Trauma
- OB/GYN Emergencies
- Procedures
- Medication Reference
- Pedi Behavioral Emergencies
- Pedi Cardiac Emergencies
- Pedi Environmental Emergencies
- Pedi Medical Emergencies
- Pedi Respiratory Emergencies
- Pedi Trauma

Structure of Individual Standing Orders:

The outline format of the SDOs is strictly for rapid and uniform reference and does not imply or direct a mandatory sequence for patient care.

- Criteria and History Section:
Outlines clinically important parameters that when assessed will assist in the application of a specific SDO. It provides a list of possible Historical, Physical and/or EKG findings that may be present if a specific SDO is applied.
- First Responder Interventions Section:
Lists and emphasizes the assessment parameters, diagnostic tests and/or devices available to personnel authorized as first responders (TAMECT, Rec Sports). These treatments should be a primary consideration for all providers for the selected SDO. When obtained, the items listed could be advantageous in making a competent clinical decision regarding a treatment path.
- EMT-Basic Interventions Section:
This section lists the interventions available to personnel authorized as EMT-Basic, EMT-Intermediate, or Paramedic and include the “priorities” that should be considered upon initial patient contact and reconsidered throughout the call.
- EMT-Intermediate Interventions Section:
The treatments included in this section are available to be used by personnel authorized as EMT-Intermediate or Paramedic.
- Paramedic Interventions Section:
This section includes both essential and optional interventions for the specific SDO in non-sequential order that are available to personnel authorized at the Paramedic level. All Interventions above the Consult section are considered standing orders, requiring no on-line consultation.
- Consult Section:
Interventions that require online medical authorization prior to application.
- The text on the right side of each guideline represents thoughts or actions that should be constantly evaluated and play a part in the decision making process.

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Treatment and management principles common to the care of every patient are detailed at the beginning of each section, and are specific for each section. For example, every trauma patient should initially be assessed and managed the same way, as should every medical patient and OB/GYN patient. Therefore, each individual SDO addresses the initial assessment and management by referring to the general assessment and management SDO for that section instead of listing the same assessment parameters on each SDO.

While no fixed set or rules can span the variety of situations which may be encountered by EMS personnel, the following SDOs, protocols, policies and procedures are comprehensive guidelines covering most situations that are routinely encountered. The implementation of a standing order is at the discretion of the TAMU employee providing care, or the employee with the highest ranking medical certification. EMS personnel should use the protocol that is most closely associated with the patient's condition.

Once TAMU EMRC personnel begin treatment under a particular SDO, the SDO serves as indirect medical control and should be used as a guideline for patient care until one of the following situations occurs:

- The patient's condition changes:**
If the patient's condition changes to another treatable rhythm during or after treatment, refer to that specific SDO, **or** contact the on-duty Supervisor for a consult for guidance. Whenever a patient changes from one algorithm to another algorithm, DO NOT administer more than the maximum total dose of a medication.
- The next step in the protocol is inappropriate for the patient:**
For example, the medic believes that completing the next step in the SDO may cause harm to the patient such as giving a medication that the patient is allergic to, or potential side effects from a medication that may worsen the patient's condition. In these circumstances, contact the on-duty Supervisor for consultation.

If a clinical improvement is noted after initial interventions, further standing orders may be withheld based upon the provider's clinical judgment. Some situations may necessitate the concurrent use of more than one SDO.

Always treat the problem which poses the greatest risk to life or loss of limb. If undeterminable, treat the most underlying problem first.

Initiation of patient transport is always encouraged at the earliest possible time in the flow of patient care. A delay in transport may occur in rare circumstances; however the delay should be well justified and only occur when a treatment considered a "critical intervention" cannot or should not be performed during transport.

Treat to the point of significant relief or appropriate clinical improvement.

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The following words and terms, when used in this Manual, shall have the following meanings, unless the context clearly states otherwise.

ABANDONMENT: Leaving a patient without medical care once patient contact has been established, unless emergency medical services (EMS) personnel are following a physician directive or the patient signs a release; turning the care of a patient over to an individual of less training when advanced treatment modalities have been initiated to include, but not limited to, IV's, intubation, and drug therapy. TDSHS Rule §157.2 (1)

A/C: Antecubital fossa

ACLS: Advanced Cardiac Life Support

ADVANCED DIRECTIVE: A legal document which defines a patient's wishes for initiation or withholding life saving interventions, up to and including CPR.

ADVANCED LIFE SUPPORT (ALS): Emergency prehospital treatment that involves invasive medical interventions including but not limited to, the delivery or assisted delivery of medications, defibrillation, and advanced airway management.

AFIB: Atrial Fibrillation

AHA: American Heart Association

AIR MEDICAL PROVIDER (AMP): Rotor-wing transport service utilized by field crews for transportation of patients from scene or nearby landing zone to a medical facility.

AMS: Altered Mental Status

APAP: Acetaminophen

ASA: Aspirin

ASPN: Associated Symptoms and Pertinent Negatives

ATTENDANT: A TAMU EMS employee authorized to practice on the ambulance at the attendant level.

BASIC LIFE SUPPORT (BLS): Emergency prehospital care involving noninvasive medical interventions. The provision of basic life support may be under the medical direction and/or supervision and control of a licensed physician.

BP or B/P: Systolic blood pressure

BRADYCARDIA: Heart rate less than 60 beats/minute

BSA: Body surface area

BVM: Bag valve mask

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CABC: C-spine, Airway, Breathing, Circulation

C-SPINE: Cervical spine

CENTRAL LINES: Means any IV catheter device which gains access to a patient's central circulation.

COPD: Chronic Obstructive Pulmonary Disease

CONSENT: Before providing care to a conscious and alert victim, consent should first be obtained. To obtain consent you should tell the victim who you are, ask the patient if they are willing to accept your help, inform them what it is that you plan to do to help them, ensure that they completely understand what you are saying, and then allow the patient to either give or not give consent.

CPAP: Continuous Positive Airway Pressure

CPR: Cardiopulmonary resuscitation

DELEGATED PRACTICE: Permission given by a licensed physician either in person, by treatment protocols or by standing order, given to specific prehospital providers authorizing prehospital medical care.

DEPENDENT LIVIDITY: Venous pooling of blood in dependent body parts causing purple discoloration of the skin, which does blanch with pressure.

DUTY TO ACT: Most professional rescuers have a duty to act at the scene of an emergency (especially if you are being paid or working as a first responder, etc...). In other words, for the exception of safety concerns, one should go to the scene of an emergency when on duty.

EJ: External jugular vein

ECG (EKG): Electrocardiogram

EMERGENCY: Any combination of events or circumstances that results in injury or illness requiring immediate medical care of a person or persons. Any situation declared an emergency by a licensed physician should be considered to be an emergency by the TAMU EMRC personnel. Situations where there is doubt about whether an emergency exists should be treated as emergencies.

EMERGENCY MEDICAL CALL: Means a medical situation in which an immediate response to a scene is required to prevent life or limb-threatening medical deterioration of a person requiring emergency medical treatment.

EMERGENCY MEDICAL SERVICES: A service with a coordinated arrangement of resources (including personnel, equipment, and facilities) organized to respond to medical emergencies and/or an individual's perceived need for immediate medical care.

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EMERGENCY MEDICAL PERSONNEL: Those individuals certified or licensed by the Department of State Health Services (DSHS) to provide emergency medical care. EMT-B; EMT-I; EMT-P; Lic-P.

EMERGENCY MEDICAL TREATMENT: Means those skills, techniques and judgments, as defined by the Medical Director, which are intended to maintain, improve or prevent deterioration of a patient medically due to a medical condition. The treatment has also been deemed appropriate to be delivered by trained personnel at the scene of a medical emergency outside the hospital and/or during transportation to the hospital.

EMERGENCY SERVICES: Those health care services provided to evaluate and treat medical conditions of recent onset and severity that would lead to a prudent layperson, possessing an average knowledge of medicine and health, to believe that urgent and/or unscheduled medical care is needed.

ET: Endotracheal

FIRST AVAILABLE: It is the time after arriving at a destination facility that the medic crew is able to respond to another call (corresponds to “Partially Available” status in computer aided dispatch program (CAD)).

FIRST RESPONDER: Individuals who are certified as Emergency Care Attendants or higher by the Department of State Health Services (DSHS) and approved by the TAMU Medical Director to become first responders for TAMU EMRC. Due to their close proximity to emergency scene, first responders may administer either basic or advanced life support prior to arrival of an MICU.

FLUID BOLUS: Administration of 250-500 ml of NaCl 0.9% via rapid infusion in an Adult patient and 20 ml/kg in a pediatric patient.

GCS: Glasgow Coma Scale

GUIDELINES: Information in protocols and/or standard operating procedures that provide personnel additional information by which to make sound judgments or determine a course of action.

HHN: Hand Held Nebulizer

ICP: Intracranial pressure

IN CHARGE: A TAMU EMS employee authorized as the lead medic on a crew

IM: Intramuscular

INTERVENOR PHYSICIAN: A physician licensed by the Texas Medical Board, who without having established a prior physician/patient relationship with an emergency patient, accepts responsibility for the prehospital care, and who shall provide proof of a current medical license when requested.

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IN SERVICE: A vehicle is considered in service if it is capable of response, patient transport or complete patient care.

IO: Intraosseous

IV: Intravenous

IVP: IV Push for administration of medications

J or j: Joule

KVO: Keep vein open; same as TKO.

MASS CASUALTY INCIDENT (MCI): Any single occurrence resulting in multiple victims which taxes an EMS system's ability to handle the victims' entire emergency prehospital care needs and maintain adequate protection for the remainder of its service area; any occurrence that requires more resources to properly handle than are immediately available.

MDI: Metered dose inhaler.

MEDICAL CONTROL: Medical Control is a MD or other authorized person who may authorize specific treatment of the sick and injured.

MEDICAL DIRECTOR: A physician licensed by the Texas Medical Board who is responsible for all aspects of the operation of an EMS system concerning the provision of medical care. The Medical Director is that Physician who provides direction and guidance of the EMS system and who authorized EMS personnel to perform specific skills.

MOBILE INTENSIVE CARE UNIT (MICU): A vehicle that is designated for transporting sick or injured individuals, staffed by at least one EMT-Paramedic and another certified individual at or above the level of EMT-Basic, and meets minimum equipment requirements established for such vehicles by TDSHS.

MONA: Morphine, Oxygen, Nitroglycerine, Aspirin

MUTUAL AID: Emergency prehospital care provided in another EMS provider's service area at the request of the other EMS provider in order to assist that provider in maintaining adequate EMS protection in its service area. Assistance provided by one provider to another whose resources are overwhelmed.

NC: Nasal cannula is an oxygen delivery device used at a flow rate of 2-6 LPM.

NEGLIGENCE: If a failure to follow the standard of care or if a failure to act results in someone being injured or causes further harm to the victim, then there is negligence. For example—failing to provide care, providing care beyond your level of training, providing inappropriate care, or failing to control behaviors that could result in injury are all considered negligence.

NKDA: No Known Drug Allergies

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NON-EMERGENCY: Means a situation in which an immediate response to a scene, hospital, health care facility or other place is not required to prevent life or limb-threatening medical deterioration of a person. May include responses to assist calls for citizens of other agencies.

NPO: Latin for “nil per os.” Nothing by mouth.

NRB: Non-rebreather mask with oxygen at 10-15 LPM or enough to maintain adequate reservoir bag inflation.

NS: Normal Saline

NTG: Nitroglycerine

N/V: Nausea/vomiting

OFF-LINE MEDICAL CONTROL: Delegated practice through the use of the SDOs, Protocols and Policies and Procedures.

ON-LINE MEDICAL CONTROL: Direct communication with Medical Control either in person, or via the use of a phone line, radio, or other form of telecommunication.

OOH-DNR: Out of hospital do not resuscitate order

OPQRST: An acronym used to help in the description of pain. O-onset of symptoms; P-provocation; Q-quality; R-radiation; S-severity; T-time

OUT OF SERVICE: A vehicle is considered out of service if it is incapable of response, patient transport or providing patient care.

PATIENT CONTACT: The point when initial contact is made between the EMS provider and the patient.

PEDIATRIC PATIENT: Patient < 45 kg in weight

PEEP: Positive end expiratory pressure

PMHx: Past medical history

PMS: Pulse, Motor, Sensation assessment parameters

PPV: Positive Pressure Ventilation. Administered via devices such as mouth to mask ventilation with oxygen, two person bag valve-mask technique with oxygen, etc.

PR: Per rectum

PRE-HOSPITAL CARE: Care provided to the sick or injured by EMS personnel in an out-of-hospital environment.

PRE-HOSPITAL PROVIDERS: All TDSHS certified or licensed personnel providing medical care in an out-of-hospital environment.

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PRN: As needed

PROTOCOLS: Written instruction providing pre-hospital personnel with a standardized approach to commonly encountered problems in the out-of-hospital setting, typically in regard to patient care. Protocols may include standing orders to be implemented prior to, or in lieu of, establishing communication with direct medical control.

q: Every

REC SPORTS MEDICS: Members of the Texas A&M University Pre-hospital Consortium who are BLS first responders employed by the Department of Recreational Sports to provide standby medical coverage to members and guests of the University's Recreational Center and participants in various Club Athletic events and intramural sporting activities.

REFUSAL OF CARE: Every conscious and alert person has the right to refuse medical treatment. If we treat patients without their consent, this could be interpreted by the patient as battery. (*Note: Patient should be at least 18 years old or legal adult to give consent. Minors CANNOT refuse treatment)

ROSC: Return of spontaneous circulation

ROSR: Return of spontaneous respiration

SALINE LOCK: Intravenous access device which allows venous access without the use of IV tubing or continuous fluids.

SAMPLE: An acronym used to gather patient history during an event. S-signs/symptoms; A-allergies; M-medications; P-prior history or pertinent past medical history; L-last oral intake; E-events leading up to the incident

SECOND AVAILABLE: A vehicle and its crew are considered second-available when they are capable of taking a response, transporting a patient and providing patient care (corresponds to "Available" status in computer aided dispatch program (CAD)).

SL: Sublingual

S/S: Signs and symptoms

STANDARD OF CARE: Care equivalent to what any reasonable, prudent person, of like certification or license level would have performed in a similar situation based on local or regionally adopted standard emergency medical services curricula.

STANDING DELEGATED ORDERS (SDOs): Standing Orders are protocols which allow certain procedures to be carried out by properly certified personnel under certain defined circumstances before requesting a consult for on-line medical direction.

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STANDARD OPERATING PROCEDURES (SOP): Standard Operating Procedures are those methods of operation which provide a consistent form of day to day operation. Standard Operating Procedures include protocols, special protocols, guidelines, and standing orders and establish the organizations Standard of Care.

SQ: Subcutaneous Injection

SUPERVISOR CONSULT: Term used to describe On-Line Medical control via authorized TAMU EMS Supervisory Personnel for the purpose of requesting additional treatment options.

TACHYCARDIA: A heart rate > 100 beats/minute

TAMECT: Texas A&M University Emergency Care Team; a volunteer first responder organization serving the Texas A&M University community by providing Basic Life Support at University and community standby events. The organization is part of the Texas A&M University Pre-hospital Consortium.

TAMU EMS: Texas A&M University – Emergency Medical Services; for simplification, this term may refer to TAMECT, Rec Sports Medics, or TAMU EMS ambulance transport, collectively.

TAMU EMRC PERSONNEL: Individuals employed by or volunteering for Texas A&M University EMS, Texas A&M University Emergency Care Team, or Texas A&M University Rec Sports Medics are collectively referred to in these guidelines as TAMU EMRC personnel or employees.

TBSA: Total body surface area

TCA: Tricyclic antidepressant

TCP: Transcutaneous pacing

TDSHS: Texas Department of State Health Services

TEXAS A&M UNIVERSITY EMERGENCY MEDICAL RESPONSE CONSORTIUM (TAMU-EMRC): Consists of Texas A&M University Ambulance Transport, and two BLS First Responder Organizations, TAMECT, and Rec Sports Medics. For simplicity, these groups may be collectively referred to in these guidelines and protocols as TAMU EMRC.

TRAUMA CENTER: A Hospital who has been specially designated for the care of trauma patients.

VAGAL MANEUVERS: Having the patient cough, or holding their breath while bearing down in an attempt to stimulate the Vagus nerve and slow their heart rate.

VITAL SIGNS (V/S OR VS): A term to indicate taking a patient's blood pressure, pulse, respiratory rate and pulse oximetry.

VOLUNTEER: An individual who provides services without expecting or receiving money, goods, or services in return for providing those services, except for reimbursement for expenses necessarily incurred in providing those services.

CLINICAL GUIDELINES



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The following procedures, therapies, and medications are authorized above and beyond those noted in a specific protocol for use at the EMS provider's discretion.

Thiamine

Thiamine may be administered to any adult patient when the provider has any reason to suspect malnutrition. Thiamine should be given as 50 mg IM and 50 mg IV/IO. If an IV cannot be established, the provider may administer the entire 100 mg IM. Thiamine should be given prior to the initial administration of Dextrose.

Dextrose

Dextrose may be administered to any patient whose blood glucose determination is < 80 mg/dl. In the hypoglycemic patient with an intact gag reflex when an IV cannot be established, dextrose may be given orally as a glucose paste. A patient refusal should not be accepted from any patient whose blood glucose level is < 80 mg/dl without a consult.

Vascular Access

Unless specifically limited or prohibited by a particular protocol, advanced EMS personnel (EMT-Intermediates, EMT-Paramedics), may obtain vascular access on any patient at their discretion. EMT-Basics may attend patients from inter-facility transports with a pre-existing saline lock, as long as there is absolutely no fluid or medications being administered to the patient through the saline lock.

Oxygen

Oxygen may be administered to any patient. It should be administered to every patient who demonstrates hypoxemia by clinical presentation and/or pulse oximetry <95% SaO₂.

Endotracheal Intubation

Advanced EMS personnel may secure the airway of any patient they believe is at risk for airway compromise or who requires positive pressure ventilation. The airway may be secured with Endotracheal intubation so long as the patient does not have any contraindications to the procedure. Endotracheal intubation may be by oral or nasal route based on clinical indications and contraindications.

Medications may be given via the endotracheal tube if:

- a. Vascular access is delayed and intubation is accomplished
- b. Auscultation reveals clear lung fields
- c. Medications given via the ET tube for the adult require higher doses and dilution, and are very susceptible to bronchial/alveolar infiltrates and alveolar wall disturbances.
- d. The "bolus" dose of any adult medication given via ET is to be doubled from the standard IV dose.
- e. Medications which may be given via ET are:
 - i. Naloxone
 - ii. Atropine
 - iii. Epinephrine
 - iv. Lidocaine

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- f. These medications should be instilled through a catheter passed beyond the tip of the Endotracheal Tube, and followed by several positive pressure ventilations via a bag-valve device attached to the Endotracheal Tube.

Acetaminophen

May be administered PO or PR to any febrile patient (without contraindications) as 975 mg for adult and as per dosing chart for pediatric patients.

General Pediatric Therapies

The number of encounters with children is far less than with adults. These protocols therefore address situations where advanced procedures in the field can directly affect a child's survival.

Control of the airway and rapid transport are the underlying principles of pediatric protocols and best serve the needs of the pediatric patient.

1. Airway and Ventilation

- A Airway management by mouth-to-mouth-and-nose, mouth-to-mask, or bag-valve-mask ventilation should be used in neonates, infants, and children as a first maneuver for providing assisted ventilation.
- B Remember that the correct position to maintain the optimal airway is age-dependent. In pediatric patients with suspected trauma, the airway maneuver of choice is a modified jaw thrust combined with cervical spine stabilization.
- C Oxygen should always be provided at high concentration in the pediatric patient and should be humidified when feasible. There are no contraindications to high concentration oxygen in the pre-hospital setting for the pediatric patient.

2. Intubation

- A When noted in the protocols, or when other maneuvers used to ventilate the pediatric patient are inadequate, Endotracheal Intubation should be attempted.
- B Children suspected of having croup/epiglottitis might experience life threatening laryngeal spasms and close off their airways; exercise extreme caution during attempts at intubation.

3. Intravenous, Saline Lock or Intraosseous Access

There should be limited number of attempts for each method in obtaining access to pediatric patients. Intravenous attempts should always precede IO access.

4. Pediatric Drug Dosage and Fluid Administration

- A For drug dosage and fluid administration, refer to both the Broselow Tape and the Pediatric Appendix.
- B When the patient is intubated and vascular access is not achieved, Lidocaine, Epinephrine, Atropine, and Naloxone may be administered via the Endotracheal Tube. The initial dose of the medications via the Endotracheal Tube is the same as the IV/IO dose. These medications should be diluted to 3-5 ml total drug volume with Normal Saline (0.9% NS), instilled through a catheter passed beyond the tip of the Endotracheal Tube, and followed by several positive pressure ventilations via a bag-valve device attached to the Endotracheal Tube.
- C Initial fluid bolus administration should not exceed 20 ml/kg.

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1. Vital Signs

- A **A complete set of vital signs should be obtained on all patients assessed, INCLUDING children and infants, within five (5) minutes of patient contact unless patient condition does not allow.**
- B Patients refusing treatment / transport should have one complete set of V/S taken and charted, if the patient allows.
- C Patients transport to a hospital should have a minimum of two complete sets of V/S obtained and recorded. For patient contact and/or transport times shorter than 15 minutes in duration, it is acceptable to use vital signs obtained upon triage at receiving facility.
- D “Stable” patients with non life-or limb-threatening problems should have V/S repeated every 15 minutes.
- E “Urgent” to “critical” patients should have V/S taken and documented every 5 minutes.
 - Patients who are being transferred (Non-Emergency) should have at least one set of V/S taken. If the initial V/S are out of normal limits, then a second set should be taken.
 - A complete set of vital signs (V/S) are defined as:
 - Respiratory Rate
 - Pulse and Heart Rate

The term “heart rate” refers most correctly to the rate of electrical depolarization (usually ventricular) noted on the ECG monitor. “Pulse rate” refers to the palpable rate of perfusion noted at a pulse point or displayed by the pulse oximeter. While in most patients these are identical values, this is not always the case. When reporting the rate on the ECG monitor, use the term “heart rate.” Crews should be certain that this rate correlates with the perfusing or palpable pulse rate.

Special Allowance: In the critical patient where time is a factor, the EMS personnel may use palpable pulses to estimate and document blood pressure. The acceptable values are as follows:

- Palpable radial pulse: Systolic of 80 mm/Hg
 - Palpable brachial pulse: Systolic of 70 mm/Hg
 - Palpable carotid pulse: Systolic of 60 mm/Hg
- Capillary Refill
Capillary Refill may be used as an adjunct to blood pressure in assessing the perfusion status of any patient.
Capillary refill may be substituted for blood pressure in the infant < 1 year of age. Capillary refill is not an acceptable substitute for B/P in the patient > 1 year of age.
- Blood Pressure
The accuracy of an obtained blood pressure is influenced by many factors, such as the size of the cuff used. A cuff too small for the arm will yield an elevated blood pressure, while one too large will result in a lower than normal reading. The cuff should easily go around the patient's upper arm, but the air bladder should not overlap itself. The cuff itself should be 2/3 the length of the patient's upper arm.

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A systolic B/P (palpated B/P) is acceptable ONLY:

- As an additional vital sign in the non-urgent patient in whom an auscultated B/P has already been obtained and was within normal limits.
- In the critical trauma patient in whom serial palpated B/P's are being obtained.
- In the patient in whom an auscultated B/P absolutely cannot be obtained.

2. **Blood Glucose**

- Blood glucose should be assessed on all patients with altered mental status. This includes patients who experience a seizure or a syncopal episode.
- A blood glucose measurement may be performed on any patient at the discretion of the EMS personnel.
- Those patients with altered mental status which appears to be secondary to trauma should also have their blood glucose assessed IF such assessment will not delay definitive interventions, such as airway management, cervical spine immobilization, hemorrhage control, transport, or vascular access.
- A patient refusal may not be accepted from any patient whose blood glucose level is not at least 80 mg/dl. A Medical Consult is required prior to refusing anyone with a blood glucose of < 80 mg/dl.
- Blood glucose should be assessed on all patients 1 year of age or less in distress, regardless of findings or complaints. The only exception would be the pediatric patient who is suspected of having epiglottitis.
- After administration of D50%, the blood glucose value will remain elevated for quite some time as the cells attempt to uptake the glucose. Therefore, blood glucose measurements taken shortly after the administration of dextrose may not reflect improvement of the intracellular hypoglycemia. If a repeat blood glucose measurement is used, wait at least 10 minutes after D50% administration.
- The patient's clinical status as well as serial blood glucose measurements should be used to determine whether to administer additional dextrose.

3. **Temperature**

Temperature should be assessed on the following:

- Pediatric seizure patients
- Patients with suspected diagnosis of sepsis
- Patients whose complaints or findings indicate febrile activity
- Patients whose findings indicate hypothermic or a hyperthermic state (Heat Stroke)
- Drowning patients who present in cardiopulmonary arrest.
 - Temperatures should be taken orally in patients who are capable of holding the thermometer correctly. Temperature should be taken rectally in all other patients.
 - Neither rectal nor oral temperatures represent true "core" temperatures. For our purposes, an oral (or secondarily, a rectal) temperature is used to guide cooling or warming in conjunction with the patient's clinical response.
 - When reporting or documenting a temperature value, indicate the source (oral, rectal, temporal, or tympanic.)

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4. **ECG Monitoring**

- A The patients ECG should be assessed within 5 minutes if patient condition allows.
- B Record a strip of ECG or at least 12 seconds duration.
- C Record any changes in rhythm or any significant changes in rate.
- D Record “pre” and “post” ECG strips before and after any intervention that should affect the cardiac rhythm or rate (meds, electrical therapy, etc.)
- E **12 LEAD**
 - a) 12-Lead ECG should be assessed on any patient who is experiencing cardiac related signs and symptoms.
 - b) If possible, a 12-Lead ECG should be obtained prior to any treatment (O₂, NTG, ASA) on patients experiencing cardiac related signs and symptoms.
- F **3 LEAD**
 - a) A 3 lead ECG should be assessed on all patients with complaints or presentation of any of the following:
 - Chest pain (or other possible myocardial ischemia pain)
 - Shortness of breath and/or dyspnea
 - Syncope
 - Dizziness
 - Nausea / vomiting
 - Hypotension/hypertension
 - Tachycardia, bradycardia, and/or irregular heart beat
 - Altered mental status

5. **Pulse Oximetry**

- A Pulse Oximetry should be used to evaluate the oxygen saturation status of all patients in whom hypoxia or ischemia is suspected.
- B Pulse oximetry may be used to titrate oxygen delivery, and permits the EMS personnel to utilize delivery or flow rates that are most appropriate for patient condition.
- C Oxygen should be administered as necessary to maintain a SaO₂ equal to or > 95%.
 - **Special Allowance:** While this may be our goal, it should be noted that patients with significant COPD history may not be able to achieve SaO₂ of 95%.
- D Pulse Oximetry readings are accurate only if the probe is able to “see” the arterial blood flow. The patient must be well perfused.
 - a) The probe should be firmly attached to a clean finger or tow. Nail polish may occlude the probe’s light beam, so unpolished nails are preferred.
 - b) Hypotensive, hypoperfused, or peripherally vasoconstricted patients are generally not good candidates for pulse oximetry. (Pulseless or cold extremities)
 - c) The heart rate from the pulse oximeter matches the patient’s palpable pulse rate.

	TAMU EMRC-EMS	MEDICATION STANDARDS	
	Standard Delegated Orders – Clinical Guidelines	CG 03	Page 6
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1. Medications may only be given:
 - a. By an approved TAMU EMRC provider.
 - b. When administered according to TAMU EMRC protocol or by specific written orders.
 - c. By direct order via a medical consult.
2. Medications and IV fluids should be checked prior to administration to the patient to ensure that they are not expired and that they are clear and free of any contaminants.
3. All patients SHOULD be asked for their allergies to medications prior to any medication administration.
4. The crewmember requesting and receiving orders are responsible for confirming the orders.
5. If, at any time, an order is unclear, ask for clarification.
6. When more than one IV bag is infused in a patient prior to the arrival at the receiving hospital, IV bags should be labeled to indicate the bag number currently being infused.
7. Any bag which has medications added shall be clearly labeled with the name of the drug, the quantity added, the time when the bag was hung, and the initials of the person preparing the bag for infusion.
8. The In-Charge is responsible for keeping all medications current and up to date as well as control of the controlled substance box.
9. When any medications are administered, they should be documented on the patient care report.

	TAMU EMRC-EMS	PROTOCOL DEVIATIONS	
	Standard Delegated Orders – Clinical Guidelines	CG 04	Page 7
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This policy manual is an overview and summary of TAMU EMRC policies and procedures that are currently in effect. As policies and procedures for the Clinical Department are revised, changes should be communicated to employees through standard communication channels.

It is difficult to cover all situations that may arise and challenge operations personnel in their efforts to provide timely, compassionate, and quality patient care to residents and visitors of Texas A&M University. Therefore, the policies and procedures contained in this manual constitute guidelines only. Any significant clinical issues should be considered on a case-by-case basis and should take into consideration any and all extenuating circumstances surrounding the event.

In the interest of patient care, should any deviation of SDO be performed, employees shall complete and Unusual Occurrence Form and forward it to the Clinical Department for review with the Medical Director. **The Medical Director for TAMU EMRC is the final authority for all clinical and patient care issues.**

	TAMU EMRC-EMS	SUPERVISOR NOTIFICATION	
	Standard Delegated Orders – Clinical Guidelines	CG 05	Page 8
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MANDATORY SUPERVISOR NOTIFICATION

System certified providers operating within the TAMU EMRC System to do under the authority of the Medical Director. As such, any incident which potentially has an adverse or negative impact on the patient or system ***should be immediately reported to the on duty Supervisor as soon as practical after the completion of the call*** so that an investigation may be initiated if warranted.

Supervisor notification should include, but not be limited to the following:

- Cardiac and/or respiratory arrest occurring after administration of a controlled substance.
- Cardiac arrest occurring after administration of a paralytic agent.
- Cardiac arrest occurring after administration of an antiarrhythmic agent in a previously stable patient.
- Any attempt (successful or unsuccessful) at needle and/or surgical airways.
- Incorrect medications administration or use (i.e., excessive amount, wrong dose, route, etc.).
- Any time the Patient Safety Restraint and/or Patient Safety Sedation procedures are utilized.
- Any cardiac and/or respiratory arrest or patient injury while attempting physical restraint.
- Any unusual circumstance or intervention that potentially causes or caused patient harm.
- A provider has operated outside of his/her level of certification, training, and/or level of authorization (i.e., state certified Paramedic, who is authorized by the Medical Director at the EMT-B level, initiating an IV or performing endotracheal intubation).
- Any potential employee exposure

If any of the above incidents occur, the Supervisor is responsible for contacting the Clinical Coordinator, EMS Manager and Medical Director appropriately.

	TAMU EMRC-EMS	PATIENT STATUS	
	Standard Delegated Orders – Clinical Guidelines	CG 06	Page 9
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Patient status updates allow for the prioritization of the patient's clinical status. When crews update the patient status it signifies that the crew has recognized the urgency of their patient. Additionally, it allows supervisory, and dispatch personnel, as well as receiving facilities, to react accordingly.

1. Priority 1 (Critical)

- A Critically ill or injured patient (immediately life-threatening illness or injury) needing immediate intervention
- B Examples might include:
 - a) Cardiac arrest or post cardiac arrest
 - b) Head injury with GCS < 8
 - c) Penetrating trauma to the head, neck, chest or abdomen

2. Priority 2 (Urgent)

- A Potentially life-threatening illness or injury
- B Examples might include:
 - a) GCS 8 – 12
 - b) Altered level of consciousness
 - c) Status epilepticus
 - d) Unresponsive patient
 - e) Unstable vital signs and/or clinical signs of shock

3. Priority 3 (Stable)

- A Non-urgent condition which may require medical attention, but not immediate treatment.
- B Examples might include:
 - a) GCS 13 – 15
 - b) Stable vital signs
 - c) Minor injuries
 - d) "Hemodynamically stable chest pain with no evidence of ischemia."

	TAMU EMRC-EMS	RADIO REPORT AND CONSULT GUIDELINES	
	Standard Delegated Orders – Clinical Guidelines	CG 07	Page 10
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The following format should be used when contacting a Supervisor or On-Line Medical Control to receive patient care orders.

1. Employee Number
2. Level of Authorization (EMT-B, EMT-I, EMT-P, etc.)
3. Transport time to facility
4. What orders you are asking for (i.e. additional pain management or any other below-the-line treatment options)? Be specific with what type of pain management you are requesting).
5. Age of patient
6. Level of Consciousness or GCS
7. Chief Complaint
8. Pertinent past medical history (specific to patient's chief complaint now)
9. Vital Signs including a Blood Glucose Level and ECG rhythm interpretation
10. Treatment administered by EMS

In the event that a consult is required and the EMS provider is unable to make contact with the Supervisor or receiving facility, the provider should complete an Unusual Occurrence form and forward it to the Clinical Department for review with the Medical Director. **The Medical Director for TAMU EMRC is the final authority for all clinical and patient care issues.**

	TAMU EMRC-EMS	COMMUNICATIONS FAILURE	
	Standard Delegated Orders – Clinical Guidelines	CG 08	Page 11
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In the event that an EMS unit cannot make contact with the receiving facility or a Supervisor for specific orders beyond those stated within the interventions section of each protocol, EMS personnel are required to follow the interventions that are listed in a particular protocol. Under no circumstances may EMS personnel administer a drug/narcotic or perform a procedure for which they are not authorized. There are no exceptions to this policy.

In the interest of patient care, should any communications failure occur, employees shall complete an Unusual Occurrence form and forward it to the Clinical Department for review with the Medical Director. **The Medical Director for TAMU EMRC is the final authority for all clinical and patient care issues.**

	TAMU EMRC-EMS	CHAIN OF COMMAND	
	Standard Delegated Orders – Clinical Guidelines	CG 09	Page 12
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1. Authority

- A The In-Charge of the first arriving medic unit is responsible for all patient care activities and coordination of resources at the scene until that responsibility is delegated to another In-Charge or assumed by a field Supervisor.
- B During MCI's and multi-unit response (> 2 units) the field Supervisor assumes operational responsibility for coordination of prehospital resources. At this point, incident command procedures are in effect.

2. Management

- A The scene of an emergency shall be managed to minimize the risk of further injury or death to the patient as well as to other persons who may be exposed to the risks as a result of the emergency condition. Priority shall be placed upon the interests of those persons exposed to the more serious and immediate risks to life and health.
- B Medical management at the scene of a medical emergency includes
 - a) Medical Evaluation
 - b) Medical aspects of extrication and all movement of the patient(s).
 - c) Medical care
 - d) Patient destination and transport decisions
- C EMS personnel shall not delegate patient care to other EMS personnel whose scope of practice limits their abilities to treat a patient.
 - a) Personnel trained in defibrillation may not hand over responsibility for defibrillation to personnel not trained in defibrillation
 - b) ALS Personnel treating a patient requiring ALS intervention may not hand over responsibility for the patient to BLS personnel.

	TAMU EMRC-EMS	NON-TAMU EMRC PERSONNEL ON SCENE	
	Standard Delegated Orders – Clinical Guidelines	CG 10	Page 13
<u>TOC</u>			

General Information

This policy establishes the guidelines for EMS personnel and identifies the limits that trained/civilian bystanders may assist during an emergency response.

Certified/Licensed Individuals Wishing to Assist

Individuals who possess valid EMS certification and/or other healthcare license but are NOT employed by TAMU EMRC, may be allowed to assist TAMU EMRC personnel in rendering patient care under the following condition:

- The individual may only participate in patient care under the direct supervision of TAMU EMRC personnel
- Individuals who possess advanced certification should NOT be permitted to administer invasive treatment UNLESS the Medical Director or Supervisor specifically approves such treatment. Such treatment should only be approved during Mass Casualty Incidents (MCI's) when TAMU EMRC resources are strained.

Non-Certified Bystanders

The use of non-certified bystanders in an emergency situation is not recommended and should be reserved for instances when their assistance could make a crucial difference in the outcome of the situation. Common situations in which a non-certified bystander might assist include, but are not limited to the following: CPR, manual C-spine stabilization, hemorrhage control, etc.. It is appropriate to provide PPE to bystanders offering assistance in patient care activities. Thorough documentation indicating the justification for such assistance should be documented in the patient care report.

Fire Department/First Responder Personnel

Fire department personnel are responsible for all fire suppression, hazard control, and heavy extrication.

In all rescue and extrication operations, the role of TAMU EMRC personnel is to direct patient care and advise rescue teams on phases of the operation which might compromise the patient's condition. Unless specifically trained to do so, TAMU EMRC personnel should not direct the technical aspects of patient rescue.

First responder personnel should be utilized in a manner that allows them to practice their assessment and treatment skills.

Law Enforcement

Law enforcement is responsible for traffic control, control of disruptive bystanders and scene security. Law Enforcement personnel with specialized training in First Response/AED may be utilized in a manner that maximizes their training and best assists in the positive outcome of the emergency.

	TAMU EMRC-EMS	NON-TAMU EMRC PERSONNEL ON SCENE	
	Standard Delegated Orders – Clinical Guidelines	CG 10	Page 14
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On Scene Physician

Texas State Board of Medical Examiners Rule 197.5 addresses “On Scene Physician intervention” and shall govern situations involving an on scene physician who offers assistance in treating patients.

All physicians who are present at the scene of an emergency and who offer assistance should be treated with professional courtesy. Any physician who offers assistance will be required to provide proof of identity and credentials before being allowed to provide patient care on scene. Below is a summary of the Rules governing Physician on Scene guidelines.

Patient’s Doctor on Scene

When a patient’s private physician is on the scene of an incident and has provided the appropriate credentials, TAMU EMRC personnel should comply with his/her directions concerning treatment of the patient to the extent that those orders are consistent with established protocols. On-line medical control should be notified of all on-scene physician contacts wishing to assist.

- When a physician elects to accompany his/her patient to the hospital, TAMU EMRC personnel should respect the physician’s wishes in the management of the patient during the entire course of patient care.
- When the physician requests that the patient be transported immediately, TAMU EMRC personnel should honor the physician’s requests with all reasonable haste after obtaining the patient’s consent.
- It is not appropriate to re-evaluate a patient after the patient has been thoroughly evaluated by a physician and the physician has made an adequate report concerning the patient’s condition to the responding crew prior to transporting the patient. Additional information concerning the patient should be obtained from the physician, his/her representative or the patient, if necessary.
- If TAMU EMRC employees believe that the physician has not properly evaluated the patient, they should perform an assessment of the patient, provide all immediately necessary treatment, and move the patient to the ambulance for further assessment and treatment.
- The patient’s physician may write orders beyond the TAMU EMRC standing delegated orders. Employees shall attempt to carry out the physician’s orders if the orders do not extend beyond the employees’ training, certification, or capabilities and the employees are in direct contact with the patient.

	TAMU EMRC-EMS	NON-TAMU EMRC PERSONNEL ON SCENE	
	Standard Delegated Orders – Clinical Guidelines	CG 10	Page 15
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Disagreements with Physician(s) on scene

- An employee who disagrees with a patient's physician concerning the management of the patient, or who disagrees with the physician's judgment concerning the use of the EMS system, should NOT express his/her disagreement to the physician; rather, the employee should discuss the matter with the on-duty Supervisor or Clinical Coordinator.
- Advise the physician that all TAMU EMRC personnel function under written standing orders and/or on-line medical direction that have been established by the TAMU EMRC Medical Director.
- Advise the physician that he/she may continue to offer assistance by providing advice to on-scene TAMU EMRC personnel or assisting with patient care under the direction of TAMU EMRC current standing delegated orders.
- If the physician insists on providing direction outside established guidelines, he or she should take complete responsibility for the care of the patient, including accompanying the patient to the hospital. Crew shall document all activities during transport.
- If the physician assumes responsibility for the care of the patient, TAMU EMRC personnel should comply with his/her directions as long as those orders are consistent with established standing orders.
- If the orders proposed by the intervening physician are not consistent with TAMU EMRC standing orders, TAMU EMRC personnel shall respectfully decline to participate in that specific care. In this event, employees shall immediately contact a TAMU EMS Supervisor.
- TAMU EMRC personnel should document all events and interaction between an intervening physician and the crew, including direction given and care provided.

Once direct contact with a physician ends, EMS personnel shall give a progress report to the receiving Emergency Department and Supervisor by radio or telephone. The Supervisor may then give additional orders or change previous order if necessary, depending on the patient's condition.

	TAMU EMRC-EMS	MEDICAL AUTHORIZATION LEVELS	
	Standard Delegated Orders – Clinical Guidelines	CG 11	Page 16
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General Information

Authorization:

Authorization is separate from certification. Every provider should have a current certification issued by the Texas Department of State Health Services (TDSHS). The Medical Director is responsible for granting authorization.

Authorization is required to provide pre-hospital or out-of-hospital care to any patient within the TAMU EMRC System. Certification level does not necessarily dictate authorization level. The Medical Director may authorize any provider to function at any level as per TDSHS Rule 157.11

To Obtain Authorization:

Prior to allowing any provider to function in a patient care delivery role, the applicant provides the following information:

- a. The individual's name, date of birth, address, social security number, and home phone number.
- b. The position for which the individual is applying
- c. All applicants should provide a copy of the most current Texas Department of State Health Services certification/licensure in accordance with the *State of Texas Administrative Code, Title 25, Part I, Chapter 157, Subchapter C, Section 157.33, 157.34, 157.35, or 157.40.* –The copy should clearly show the **applicant's name, certification/licensure number, and expiration date.**
- d. A copy of a valid driver's license that clearly shows the **applicant's name, license number and expiration date.**
- e. All applicants should meet the criteria to be insurable by the current vehicle insurance vendor for the University, should the applicant be seeking employment in a capacity that would require operation of University vehicle.
- f. **All applicants** are required to have a current (less than 2 years) **AHA Health Care Provider CPR OR an equivalent** course completion card with legible signatures and the date of the course.
- g. The following certifications are preferred for all applicants or should be obtained within 6 months of hire or first available class:
 - Advanced Cardiac Life Support (**ACLS**) course completion card from the American Heart Association – for Paramedics only
 - Basic Trauma Life Support (**BTLS**) course completion card is recommended. PHTLS may be substituted – for Paramedics and recommended for Basic and Intermediates
 - Pediatric Advanced Life Support (**PALS**) or an approved equivalent pediatric course is recommended – for Paramedics only

All initial applicants for employment as pre-hospital care providers with TAMU EMS will be required to successfully complete a written general knowledge examination from an approved test bank with an overall score of at least 80%, skills evaluation as per the Medical Director, interview process, and physical agility/health screening (where applicable). Additionally, the applicant will be subject to a background check and verification of insurability with the University's vehicle insurance provider.

	TAMU EMRC-EMS	MEDICAL AUTHORIZATION LEVELS	
	Standard Delegated Orders – Clinical Guidelines	CG 11	Page 17
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The applicant should be successful at each phase before moving on to the next phase.

The **Skills Evaluation** will be scenario-based evaluations with specific skills as per the Medical Director interjected at key points (i.e. an EMTP skill evaluation might be based on an AHA-ACLS scenario with skill evaluations for ET Intubation, Defibrillation, Pacing, or IV establishment).

Medical Authorization will be granted to an employee only after a probationary period in which the individual's assessment, decision making, and treatment skills are evaluated.

The Clinical Coordinator shall establish a training and evaluation program for granting medical authorization.

The Medical Director maintains authority over all employees' ability to use medical skills. Therefore, the Medical Director or his designee may deny an employee the right to use his or her medical skills at any time during the course of employment with TAMU EMS.

The Medical Director or his/her designee may:

- Require an employee to undergo counseling;
- Require an employee to submit to remediation, including but not limited to Retraining, Testing, or Field/hospital preceptorship
- Place an employee on medical authorization probation
- Reauthorize an employee at another level
- Deauthorize an employee
- Recommend to the Texas Department of State Health Services that the employee be decertified.

To Maintain Authorization:

1. The employee should retain his certification/licensure with TDSHS. If, for any reason, there is a lapse in certification, the employee will be **suspended** immediately. The employee may not return to work in a patient care role until the problem has been rectified. The employee should show proof that TDSHS has reinstated the EMT certification/licensure. If any employee allows his/her certification to expire or be revoked more than once during employment, he/she will be **de-authorized immediately**.
2. The employee should maintain all of his/her card courses in current standing. If a card lapses, the employee will have thirty (30) days to replace that card. After the thirty (30) day period, the employee may be reauthorized to a lower level of practice and the EMS Manager will be notified.
3. The employee should participate in Continuing Education (CE) in accordance with the State of Texas *Administrative Code, Title 2, Part I, Chapter 157, Subchapter C, Section 157.38* and in accordance with the defined policies of TAMU EMRC.
4. Attend all mandatory TAMU EMRC CE offerings.

	TAMU EMRC-EMS	MEDICAL AUTHORIZATION LEVELS	
	Standard Delegated Orders – Clinical Guidelines	CG 11	Page 18
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5. If at any time the employee loses their EMS certification, driver's license, or is part of an incident that might impact their insurability, the employee shall immediately notify their immediate Supervisor, or Clinical Department. The employee may be removed from active duty pending a review of the situation.
6. If at any time the employee is under investigation by a law enforcement agency or the Texas Department of State Health Services, the EMS Manager or designee will be notified immediately. The EMS Manager shall determine the seriousness of the allegations as it relates to the individual's function as an employee. The employee may be removed from active duty pending a review of the situation.
7. No employee will function in an official capacity if they have any physical or mental impairment or disease which could reasonably be expected to either impair their ability to function or jeopardize the health and safety of the patient or public or fellow employees. If such a condition exists, the employee should immediately inform the On Duty Supervisor or higher authority.

AUTHORIZED INTERVENTIONS BY LEVEL

The following represents patient care activities to be performed by EMS personnel at their current level of authorization. All BLS activities are authorized on standing orders to be used as needed. Authorization for ALS activities is indicated in the specific protocol or procedure for each intervention. All interventions listed below indicated with a (*) require individual training and authorization by the Medical Director or his/her designee.

First Responder/Emergency Care Attendant – Basic Life Support (to include Rec Sports Medics and TAMECT personnel of any certification level, operating in any capacity with their respective First Responder Organizations)

- Patient assessment
- Pulse oximetry
- Oxygen administration
- Blood Glucose assessment
- Use of oral adjuncts including oral and nasal airways, bag-valve mask device and oral suctioning
- Provisions of CPR as defined by the American Heart Association
- Vital signs
- Bandaging and splinting including traction splinting
- Cervical spine immobilization
- Manual techniques for airway provision, maintenance and support, relief of airway obstruction as prescribed by AHA
- Control of external hemorrhage
- Automatic external defibrillator*
- Emergency Childbirth
- Aspirin administration
- Nebulized Metered inhalers
- Administration of oral glucose
- Administration of oral APAP and Ibuprofen

	TAMU EMRC-EMS	MEDICAL AUTHORIZATION LEVELS	
	Standard Delegated Orders – Clinical Guidelines	CG 11	Page 19
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- Administration of Diphenhydramine, PO
- Administration of Nebulized bronchodilation (Albuterol only)
- Administration of Emergency Epi-Pen for anaphylaxis

Emergency Medical Technician

- **All skills listed for First Responder**
- Use of approved secondary airway device (Combitube)*
- IM administration of Epinephrine 1:1000*
- Automatic external defibrillator
- Use of Qualitative CO₂ detection
- Use of impedance threshold device (ResQPOD)
- Operation of CPAP device / portable ventilator

Special Allowance: If 12-Lead ECG equipment is readily available and patient condition and time permits, it is appropriate for a **properly trained** BLS provider to **ACQUIRE** a 12-Lead ECG on patients (in the presence or at the direction of their In-Charge Paramedic) treated under the “Acute Coronary Syndrome” SDO.

Emergency Medical Technician – Intermediate

- **All skills listed for EMT-Basic**
- Vascular access
- Intraosseous infusion
- IV Fluid administration
- Administration of D50%
- Administration of IM/IV Thiamine
- Administration of IV/IN Naloxone
- Administration of Zofran ODT
- Orotracheal intubation
- Nasotracheal intubation
- Use of PEEP
- Blood specimen collection

Personnel authorized at the basic or intermediate level **MAY NOT administer** any **controlled substance**, including **Pharmacologically Assisted Intubation (PAI)** or medications that are not specifically approved in the Clinical Policy or the Protocol.

Special Allowance: If 12-Lead ECG equipment is readily available and patient condition and time permits, it is appropriate for a **properly trained** BLS provider to **ACQUIRE** a 12-Lead ECG on patients (in the presence or at the direction of their In-Charge Paramedic) treated under the “Acute Coronary Syndrome” SDO.

	TAMU EMRC-EMS	MEDICAL AUTHORIZATION LEVELS	
	Standard Delegated Orders – Clinical Guidelines	CG 11	Page 20
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Emergency Medical Technician – Paramedic

- **All skills listed above**
- All routes of medication administration (IV, IO, ET, SQ, SL, PR, IM, IN)
- Obtaining and interpreting ECG
- Obtaining and interpreting 12-Lead ECG
- Vagal maneuvers
- Defibrillation / Cardioversion
- External Cardiac Pacing
- Nebulized bronchodilation
- Nasogastric intubation / lavage
- External jugular cannulation
- Chest decompression*
- Surgical airway*
- Pharmacologically Assisted Intubation*

Clinical Supervisor / EMS Manager

- All skills listed above
- All Therapies within the protocols including extended medical authorization and other special procedural skills as developed.

Attendant level personnel may practice under the supervision of a fully authorized paramedic to the full extent of their authorization. Clinical authorization is assigned to an individual, and not to the operational position.

Practicing Beyond Your Certification

TAMU EMRC personnel who are asked by a physician, nurse, paramedic, or other person to perform procedures that are outside of their level of training, certification, or protocol should adhere to the following guidelines:

1. Employees should inform the person giving the directive that their training, certification, and/or protocol does not cover the requested procedure and that they should respectfully decline to perform the procedure.
2. Employees should document the procedure requested, the name and position of the person who requested the procedure, and the outcome of the employee's refusal to perform the procedure.

Failure to follow this policy may result in the suspension and/or revocation of an employee's medical authorization.

Employees should not perform any skill that they have not been trained, certified, and authorized to perform.

	TAMU EMRC-EMS	MEDICAL AUTHORIZATION LEVELS	
	Standard Delegated Orders – Clinical Guidelines	CG 11	Page 21
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Geographical Area and Duty Status

The TAMU EMRC System SDOs shall be utilized under the Medical Directors approval in the TAMU EMS 911 service area, mutual aid areas, special event areas, and anywhere in the State of Texas where emergency medical care is needed and not available at the time.

TAMU EMRC System personnel shall utilize these protocols under the Medical Director's approval when acting in their official capacity when representing TAMU EMRC as defined in the Standard Operating Procedures. TAMU EMRC personnel shall also utilize these protocols in situations where emergency medical care is needed and not available. These situation include, but are not limited to, motor vehicle accidents, cardiac arrests, and other witnessed medical emergencies. The approved TAMU EMRC System protocols shall **NOT** be used when working for another EMS system.

Employee – Student Relationship

Employees enrolled in Texas Department of State Health Services (TDSHS) approved certification courses and assigned to a unit in a student capacity may perform advanced skills within the scope of the course in which they are enrolled. The skills are to be performed under the direct supervision of an approved preceptor and/or medical supervisor. All other rules and regulations regarding student conduct should be observed.

Employees enrolled in TDSHS approved certification courses should not perform advanced skills beyond their current certification level while in the course or their normal job duties.

	TAMU EMRC-EMS	SPECIAL EVENT AUTHORIZATION	
	Standard Delegated Orders – Clinical Guidelines	CG 12	Page 22
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Medical Authorization for Attendant Level Paramedics and Non-Paramedic providers assigned to Special Events and/or Standbys.

This policy establishes patient care activities for Special Events and/or standbys for employees currently authorized by the Medical Director as Paramedics, EMT-Intermediates and/or EMT-Basics at the attendant level within the TAMU EMS System.

General Information

One (1) employee should have a minimum of six- (6) moth's employment with TAMU EMS.

The Supervisor and EMS Dispatch should be notified whenever a Special Event and/or Standby unit is placed in service with Attendant Level employees as well as the location of the standby.

Both employees should sign the Controlled Substance sign-in log as outlined in CG 30.

Units dedicated to any event usually do not transport patients from the site. When the crew encounters a patient, EMS dispatch should be contacted for a new incident number and, if the patient requires transport, another unit should be sent to their location.

Attendant Level Paramedic personnel assigned to an MICU for Special Events and/or Standbys may perform all interventions listed in CG 11 under EMT-P Authorization **except for the following** which require Supervisor or Medical Direction consultation:

- Nasogastric intubation/lavage
- External jugular cannulation
- Nasotracheal intubation
- Chest decompression
- Surgical airway
- Rapid Sequence Intubation
- Pericardiocentesis

	TAMU EMRC-EMS	FIRST RESPONDER SCOPE OF PRACTICE	
	Standard Delegated Orders – Clinical Guidelines	CG 13	Page 23
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Current first responders shall provide pre-hospital care at the BLS level only. This includes those first responders who are currently certified as ALS providers. (Refer to Medical Authorization Levels – First Responder - BLS)

Exceptions:

Off-Duty TAMU EMS employees: Medical control is extended to off duty EMS personnel functioning within the boundaries of the Texas A&M University – College Station Campus.

	TAMU EMRC-EMS	EMS TRANSFER POLICY	
	Standard Delegated Orders – Clinical Guidelines	CG 14	Page 24
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EMS Transfer Protocol

When called to A.P. Beutel Student Health Center because assessment has already been made by a physician that transport is necessary, it is the duty of the EMS provider to transport the patient. The determination for EMS transport constitutes a Medical Decision made by the transferring physician and constitutes a medical order. EMS personnel are under no obligation to volunteer other transportation alternatives to the patient, and should avoid doing so.

If the patient spontaneously states that they do not want to be transported prior to the initiation of transport, the transferring physician must be notified immediately and TAMU EMS personnel may not leave until that physician has made a decision how to proceed.

In cases where the patient states they do not want to be transported by EMS after transport has begun, the physician ordering transport must be notified immediately. Even if the patient is willing to sign a waiver of transport, the trip may not be terminated until the door of the receiving medical facility is reached.

In all cases, if the initiating physician cannot be reached, the EMS Medical Director should be notified.

In cases where the patient transport involves a psychiatric or emotional evaluation, those refusing EMS transport cannot be released, waiver or not, until the physician is notified and has made a decision on how to proceed.

If the patient has been certified for transport by on-scene medical personnel, EMS need not perform a full assessment unless it is requested by the originating medical personnel, or if there is an obvious overriding medical necessity. Packaging for transport should follow standard procedure unless other orders are given by the initiating physician.

If EMS is called to A.P. Beutel for a patient who has not been evaluated by a physician (after hours, etc.), standard protocols will apply.

If EMS personnel have concerns about a physician's directive, the EMS Medical Director should be notified so that the matter can be resolved on a physician to physician basis as necessary.

David C. Teller, MD
Medical Director
Texas A&M University EMS

	TAMU EMRC-EMS	ENCOUNTERING EMERGENCIES	
	Standard Delegated Orders – Clinical Guidelines	CG 15	Page 25
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The purpose of this policy is to provide employees with guidelines for taking action when encountering an emergency while on duty and responding to a call or hospital.

TAMU EMS has a duty to act when confronted with any emergency scene encountered within its territory.

The following guidelines should be followed if an employee encounters an emergency while “on the air.”

- Incidents with no injuries should be reported to EMS Communications if creating a hazard.
- Major accidents or incidents with obvious illnesses or injuries should be reported to EMS Communications. The crew should stop and assess, treat and/or transport as necessary.

The following guidelines should be followed if an employee encounters an emergency while responding to a call or to a hospital:

- Incidents with no injuries should be reported to EMS Communications if creating a hazard.
- Major accidents or incidents with obvious illnesses or injuries should be reported to EMS Communications.
- The dispatcher should determine whether the unit should proceed to the original call or be assigned to the new incident.
- If transporting a non-urgent/non-critical patient, stop, assess the scene for injuries. At least one crew-member should stay with the patient being transported.
- If transporting an urgent/critical patient, contact EMS Communications and advise of the incident, but do not stop and assess.

The following guidelines should be followed if an employee encounters and emergency in a neighboring service area:

- Notify EMS Communications of the incident and have the appropriate service respond.
- Stop and render aid.
- Await the arrival of the appropriate unit.
- TAMU EMS will transport patients if asked to do so by representatives of the agency assigned to that territory. All patient care provided by TAMU EMS personnel should adhere to the Standing Delegated Orders and Guidelines provided by the TAMU Medical Director.

	TAMU EMRC-EMS	POTENTIALLY VIOLENT SCENES AND STAGING	
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The purpose of this policy is to establish guidelines to be followed by TAMU EMRC personnel when responding to any incident that may place crewmembers in a potentially dangerous situation.

Staging

Staging refers to the positioning of the medic unit in a secure location until Law Enforcement has cleared the scene or the crew has assured that the scene is safe.

EMS Communications may advise a medic unit to stage when it receives information that is indicative of a hazardous or dangerous situation. If EMS Communications advises a medic unit to stage, the unit's crewmembers should position the unit at a safe distance from the scene.

Medic units should be staged by EMS Communications in the following situations:

- Assaults/sexual assaults;
- Any scene with known or possible firearm involvement;
- Known/suspected GSW or stabbing;
- Domestic disturbances;
- When Violent/Psychiatric/Suicidal patients are involved;
- When advised to stage by law enforcement; and
- During other situations deemed dangerous by EMS Communications

When a unit has been advised to stage within eight minutes of a certain location crewmembers shall respond non-emergency to the staging area. If that unit has a response time over eight minutes to a specified staging area, the crew shall respond emergency traffic to the staging area.

Self Defense

Self-Defense is the act or acts of an individual used to defend or protect him/herself from harm. TAMU EMRC personnel can defend themselves against a combative patient but can only use the amount of force necessary to protect themselves.

TAMU EMRC personnel may take any action necessary, including the use of reasonable force, to protect themselves or others against a combative person. However, TAMU EMRC personnel are not authorized to seek revenge in a punishing manner.

TAMU EMRC personnel confronted by a combative individual at the scene of an incident should make every effort to avoid confrontation by departing the scene and making an immediate request for law enforcement assistance. If efforts to avoid confrontation prove unsuccessful and personal injury to TAMU EMRC personnel appears imminent, crewmembers on the scene may have to use reasonable force to address the situation. Crewmembers should inform Law Enforcement and the Field Supervisor of the situation as soon as possible.

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Reasonable Force

“Reasonable Force” is the amount of force necessary to keep an individual from causing injury to herself/himself or others. Stated differently, the amount of force used by TAMU EMRC personnel cannot exceed the force being used against TAMU EMRC personnel. TAMU EMRC personnel should only use reasonable force after efforts to avoid confrontation have failed.

Patient Restraint

Restraining is an act of force used to prevent someone from doing something particularly something that may be physically harmful, or to keep him under control. EMS personnel should consider restraining a patient when careful assessment of the patient reveals that the individual, due to a medical or psychiatric condition, is a danger to him/herself or others.

TAMU EMRC personnel should adhere to the following guidelines when restraining patients:

- The objective should be to place whatever reasonable restraints are necessary on the patient as quickly as possible, with the least amount of discomfort to the patient, and with the least amount of force.
- Restraint should be individualized and afford as much dignity to the patient as the situation allows.
- Any restraint should be humanely and professionally administered.
- The method of restraint should be the least restrictive means necessary for the protection of the patient and others.
- When encountering a “pre-violent” patient, keep him/her under constant observation and be alert for signs of escalating anxiety. Do not take personal chances; never attempt to subdue or physically restrain a person if you are alone. Never hesitate to back off and obtain adequate assistance. Such a time-out may promote de-escalation of anxiety.
- Remember that the restrained patient has no way of exiting the unit in an emergency and is therefore totally dependent on the crew for his/her welfare.
- The use of restraints should be carefully documented. Such documentation should include the reason for and means of restraint and the periodic assessment of the restrained patient.

	TAMU EMRC-EMS	COORDINATION WITH LAW ENFORCEMENT	
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This policy establishes guidelines to be followed by employees responding to or dealing with any suspect/known criminal activity and/or functioning in or around a crime scene.

General Information

In order to effectively serve the public, it is necessary for TAMU EMRC personnel to maintain a positive working relationship with all of the Law Enforcement agencies within Brazos County.

Patient Interrogation:

Patient care shall always remain the primary concern of TAMU EMRC personnel during any joint EMS / Law Enforcement operation. Law Enforcement officers conducting an investigation are permitted to detain and question patients at the scene as long as such questioning does not interfere with the treatment of urgent/critically injured patients or jeopardizes the patient's health.

Patients in Custody / Prisoner Transport

Any patient that is in custody or “under arrest” shall receive the same quality of care expected to be given to any other patient.

If a patient in custody requires transport or if the arresting officer requests transport, TAMU EMRC personnel shall transport the patient to the most appropriate facility. If the arresting officer does not feel that the patient requires transport, and this conflicts with the opinion of TAMU EMRC personnel, crewmembers shall exercise due diligence to convince the arresting officer of the necessity to transport the patient to a medical facility. At a minimum, the arresting officer shall follow the patient to the hospital and have the patient handcuffed during transport. If at all possible, the patient should be cuffed in front or with hands at his or her side to facilitate vascular access. If crewmembers become uncomfortable riding alone with the patient, they may request that an officer accompany them in the back of the ambulance. Any questions should be directed to the on-duty Supervisor.

Patients / prisoners should never be handcuffed to the stretcher or directly to the ambulance.

Belligerent and Violent Patients

If not already enroute or on location, Law Enforcement should be called to assist with the patient. Unless instructed to do so by Law Enforcement or the patient is an obvious threat to him/herself or employees, belligerent or violent patients should not be restrained.

When the belligerent or violent patient requires transport for any medical, mental, or safety reason, but refuses to be transported, TAMU EMRC personnel should ask that Law Enforcement assume responsibility and place the patient in protective custody. Transportation of the patient shall then occur as with any patient in custody.

A belligerent patient may refuse treatment and transport, and then refuse to sign the release. TAMU EMRC personnel should assure that the patient is competent and not a threat to him/herself or anyone else prior to letting the patient refuse care. Law Enforcement should be called to the scene and asked to sign as a witness on the release form.

	TAMU EMRC-EMS	COORDINATION WITH LAW ENFORCEMENT	
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Intoxicated / Under the Influence

Patients who present to employees “under the influence” and require medical care are entitled to the same quality of care as given to any other patient. Several disorders, including hypoglycemia, epilepsy, and even some psychological disorders present as intoxication. Therefore, employees should not dismiss a patient as “under the influence” unless the patient confirms that the nature of the illness is the result of a moderate consumption of alcohol or other mind-altering substances.

Any patient that presents with signs of intoxication and does not require medical care shall be referred to Law Enforcement. If Law Enforcement officers are not on location, employees should stand-by on location until their arrival.

Preserving Evidence / Crime Scene Management

Upon arriving at the scene of a suspected or known crime prior to Law Enforcement, employees should assure that the scene is safe. If employees suspect criminal activity, crews should pay particular attention to the environment and the patient. While the importance of preserving evidence should be kept in mind, it is emphasized that this should be secondary to patient care and resuscitative measures.

In an effort to keep disruptions of the crime scene to a minimum, crewmembers should use the same pathway into and out of the crime scene. Unless necessary for crew safety or patient care, nothing in the “crime scene” should be touched or moved.

Injured Patient

When patient care necessitates moving the patient, evidence or objects, crewmembers should be prepared to make written notes of what was moved, the location of object prior to moving, who moved object, and why the object was moved.

The following guidelines should be adhered to when moving evidence or objects at a suspected or known crime scene.

- When evidence is moved, crews should always use gloved hands.
- Weapons should be picked up using rough surfaces such as a handle.
- Tweezers and hemostats can also be used to pick up evidence.
- All evidence should be placed in a paper bag for preservation.
- Avoid cutting or tearing areas of a patient's clothing that might contain markings from entrance or exit wounds. The patient's clothes should be cut along seams to prevent disruption of potential evidence.
- Place any clothing or other patient belongings into a paper bag to give to the investigating officer.
- Evidence can be very inconspicuous; crewmembers should be observant and cautious not to disturb any fingerprints, footprints, or other evidence. If immediate transport is not necessary, crews should remain on scene until the arrival of Law Enforcement to preserve scene integrity.
- All non-essential personnel and onlookers should not be allowed into the crime scene area.

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Dead on Scene (DOS)

If the patient is obviously dead and the death appears to be due to other than natural causes, the following procedures are to be followed:

- Do not touch or move the body.
- Immediately request the appropriate Law Enforcement agency, if not already on the scene.
- Do not touch or move any weapons, medications containers, suicide notes or any other items that may be pertinent to the incident investigation.
- Avoid touching doors, windows, light switches, etc.
- Scene telephones should only be used after clearance by a Senior Law Enforcement officer.

Suicides

Law Enforcement should be notified of all suicides or attempted suicides. Upon arriving at the scene of a suicide do not remove the body unless it is absolutely necessary. When a body should be moved, a sketch shall be made to help in the investigation of the suicide. If the suicide was due to hanging and patient assessment or treatment makes it necessary to cut the patient down, do not cut or untie any knots. If it is determined that the patient is dead, leave the noose intact about the neck. If the patient is alive and immediate transport is necessary before Law Enforcement arrives, take any suicide notes or evidence necessary to preserve your findings and the crime scene. As soon as possible, have Law Enforcement notified of the transport destination. If Law Enforcement is on the scene, leave the suicide note and any other evidence with Law Enforcement officer(s).

Narcotics

Unless a patient's condition warrants immediate transport, crews should remain on scene and await the arrival of Law Enforcement when an incident involves narcotics or other controlled substances.

- When a patient's condition warrants immediate transport, if possible, crewmembers should take a sample of the narcotic as the doctor will need it for analysis. Crewmembers should never handle and unknown substance with their bare hands as several street drugs can be absorbed through the skin.
- If Law Enforcement is not on location when patient is transported, they should be notified as soon as possible as to where the substance will be, how much was transported, and with whom it will be left at the hospital.
- If at all possible, crewmembers should remain at the hospital with the evidence until the arrival of Law Enforcement.

Requesting Law Enforcement Assistance

- Employees should call for Law Enforcement assistance anytime a crewmember feels threatened or assistance is needed in controlling a scene or combative patient.

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Communications shall Automatically Notify Law Enforcement when any of the Following Occurs:

- Assaults/Sexual assaults;
- Domestic disputes/disturbances;
- Animal bites;
- Motor Vehicle Accidents (MVA's);
- Overdoses;
- Shootings;
- Stabbings;
- Attempted suicides;
- Suspected/Known DOA's;
- Suspected child and/or elderly abuse; or
- Unknown type emergencies

When crews arrive on the scene of an incident and feel an immediate threat to their own safety, they should immediately withdraw from the scene to a secure location and notify Communications.

Jail Responses

When responding to incidents at any detention facility within Brazos County, employees should adhere to the following guidelines:

- **The communications center should only dispatch the medic unit unless the information received suggests that more personnel may be required;**
- Equipment brought into the detention facility should never be left unattended in the prisoner area;
- Never proceed through the detention facility unescorted, always have a Law Enforcement escort both into and out of the facility;
- Personnel should never be left unattended at a detention facility;
- If the prisoner is transported, a Law Enforcement officer should accompany the prisoner. All patients who are in custody should be handcuffed and accompanied by a Law Enforcement officer. If possible, patients should be cuffed with their arms to their sides to facilitate vascular access. A Law Enforcement officer shall follow the medic unit to the transport destination. If at anytime the crew becomes uncomfortable riding alone with the patient, request that a Law Enforcement officer accompany the patient/prisoner in the back of the ambulance. Any questions should be directed to the on-duty Supervisor; and
- Patients/prisoners should never be handcuffed to the stretcher or directly to the ambulance.

	TAMU EMRC-EMS	REQUESTS FOR ASSISTANCE	
	Standard Delegated Orders – Clinical Guidelines	CG 18	Page 32
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This policy establishes guidelines to be followed by TAMU EMRC personnel needing to request additional assistance while on the scene of an incident.

General Information

TAMU EMRC crews have the authority to call for additional assistance in any situation or condition in which they do not have the available resources or ability to manage the scene.

Additional assistance may be requested for any one or more of the following:

- Medic Units;
- Medical Personnel;
- Helicopter Transport;
- Fire apparatus;
- Rescue equipment;
- Law Enforcement; or
- Specialized Services (for example, Pastoral, CPS, or APS services).

Upon arriving on location of any incident, TAMU EMRC personnel need to determine as quickly as possible if any additional equipment, supplies, and/or manpower will be required. Crews shall notify Communications of their specific needs.

A crew requesting additional assistance should provide Communications with the following information:

- Type of assistance needed;
- Reason for request;
- Exact location; and
- Any special conditions or circumstances.

	TAMU EMRC-EMS	TRANSPORTING PATIENT VALUABLES	
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- It shall be the goal of employees to ensure that all of a patient's personal belongings stay with the patient and arrive at the destination with the patient. If articles are unintentionally left in the ambulance they should be returned as soon as possible.
- TAMU EMS discourages the unnecessary handling of patient belongings.
- It is the responsibility of the field crew to ensure that all patient belongings are appropriately handled.
- Employees should document all personal belongings of the patient that are handled by employees during patient contact. Employees should make an inventory listing of the items on the computerized patient report in the "Personal Effects" field and obtain a signature for the disposition of the items.
- If contact with patient valuables (purse, wallet, etc.) is necessary, it should be done in the presence of at least one witness not employed by the TAMU EMRC, such as a law enforcement officer or other official.
- If removal of patient valuables is justified by a need to reduce possible injury or for a medical procedure, removal should be witnessed by a law enforcement officer or other official and placed in a safe location.
- In all circumstances, the handling of valuables (and their description) should be clearly documented on the ambulance run form and the witness to the handling of the items should be identified.
- Employees should consult local hospital policies regarding valuables because some hospitals may require that all patient valuables be turned over to hospital security, or other authorized personnel.

	TAMU EMRC-EMS	PATIENT CONSENT	
	Standard Delegated Orders – Clinical Guidelines	CG 20	Page 34
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This policy establishes guidelines for obtaining patient consent for emergency care.

General Information

TAMU EMRC PERSONNEL SHALL NOT REFUSE TRANSPORT TO ANY PATIENT UNDER ANY CIRCUMSTANCES.

Patient Consent for Service

Texas Health and Safety Code § 773.008 provides that:

Consent for emergency care of an individual is not required if:

(1) the individual is:

- (A) Unable to communicate because of an injury, accident, or illness or is unconscious; and*
- (B) Suffering from what reasonably appears to be a life-threatening injury or illness;*

(2) a court of record orders the treatment of an individual who is in an imminent emergency to prevent the individual's serious bodily injury or loss of life; or

(3) the individual is 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.

Consent to Treatment of Child by Non-Parent

Texas Family Code § 32.001 provides that the following persons may consent to medical treatment of a child when the person having the right to consent as otherwise provided by law cannot be contacted and that person has not given actual notice to the contrary:

§ 32.001 Consent by Non-Parent

(a) The following persons may consent to medical, dental, psychological, and surgical treatment of a child when the person having the right to consent as otherwise provided by law cannot be contacted and that person has not given actual notice to the contrary:

- (1) a grandparent of the child;*
- (2) an adult brother or sister of the child;*
- (3) an adult aunt or uncle of the child;*
- (4) an educational institution in which the child is enrolled that has received written authorization to consent from a person having the right to consent;*
- (5) an adult who has actual care, control, and possession of the child and has written authorization to consent from a person having the right to consent;*
- (6) a court having jurisdiction over a suit affecting the parent-child relationship of which the child is a subject;*
- (7) an adult responsible for the actual care, control, and possession of a child under the jurisdiction of a juvenile court or committed by a juvenile court to the care of an agency of the state or county; or*

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- (8) *a peace officer who has lawfully taken custody of a minor, if the peace officer has reasonable grounds to believe the minor is in need of immediate medical treatment.*
- (b) *The Texas Youth Commission may consent to the medical, dental, psychological, and surgical treatment of a child committed to it under Title 3 when the person having the right to consent has been contacted and that person has not given actual notice to the contrary.*
- (c) *This section does not apply to consent for the immunization of a child.*
- (d) *A person who consents to the medical treatment of a minor under Subsection (a)(7) or (8) is immune from liability for damages resulting from the examination or treatment of the minor, except to the extent of the person's own acts of negligence. A physician or dentist licensed to practice in this state, or a hospital or medical facility at which a minor is treated is immune from liability for damages resulting from the examination or treatment of a minor under this section, except to the extent of the person's own acts of negligence.*

Consent to Treatment by Child

Texas Family Code § 32.003 provides that a child may consent to medical treatment if the child:
§ 32.003 Consent to Treatment by Child

(a) *A child may consent to medical, dental, psychological, and surgical treatment for the child by a licensed physician or dentist if the child:*

(1) *is on active duty with the armed services of the United States of America;*

(2) *is:*

(A) *16 years of age or older and resides separate and apart from the child's parents, managing conservator, or guardian, with or without the consent of the parents, managing conservator, or guardian and regardless of the duration of the residence; and*

(B) *managing the child's own financial affairs, regardless of the source of the income;*

(3) *consents to the diagnosis and treatment of an infectious, contagious, or communicable disease that is required by law or a rule to be reported by the licensed physician or dentist to a local health officer or the Texas Department of Health, including all diseases within the scope of Section 81.041, Health and Safety Code;*

(4) *is unmarried and pregnant and consents to hospital, medical, or surgical treatment, other than abortion, related to the pregnancy;*

(5) *consents to examination and treatment for drug or chemical addiction, drug or chemical dependency, or any other condition directly related to drug or chemical use; or*

(6) *is unmarried, is the parent of a child, and has actual custody of his or her child and consents to medical, dental, psychological, or surgical treatment for the child.*

(b) *Consent by a child to medical, dental, psychological, and surgical treatment under this section is not subject to disaffirmance because of minority.*

(c) *Consent of the parents, managing conservator, or guardian of a child is not necessary in order to authorize hospital, medical, surgical, or dental care under this section.*

(d) *A licensed physician, dentist, or psychologist may, with or without the consent of a child who is a patient, advise the parents, managing conservator, or guardian of the child of the treatment given to or needed by the child.*

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(e) A physician, dentist, psychologist, hospital, or medical facility is not liable for the examination and treatment of a child under this section except for the provider's or the facility's own acts of negligence.

(f) A physician, dentist, psychologist, hospital, or medical facility may rely on the written statement of the child containing the grounds on which the child has capacity to consent to the child's medical treatment.

Legal Competency and Present Mental Capacity to Consent or Refuse Evaluation or Treatment

TAMU EMRC personnel are obligated to offer evaluation and/or treatment to anyone with evidence of illness or injury regardless of whether or not they initially refuse such evaluation and/or treatment. However, a patient must have the legal competency and present mental capacity to consent before consent is deemed to be valid.

- **Mental competency:** is a legal term, and there is a presumption of legal mental competency unless one has been declared mentally incompetent by the courts. Legally competent individuals have the right to refuse medical treatment.
- **Present mental capacity:** refers to one's present mental ability to understand and appreciate the nature and consequences of his/her condition and to make rational treatment decisions.

While there are criteria for determining legal competency and present mental capacity as defined in this policy, it is not possible to anticipate or cover every potential circumstance with this guideline. Therefore, we should always effect a patient disposition that is safe and appropriate given the circumstances.

When evaluating a patient for the ability to consent to or refuse treatment, the provider must determine whether or not the patient possesses the present mental capacity to understand and appreciate the nature and consequences of his/her condition and to make rational treatment decisions. Such an evaluation must take into consideration not only the patient's orientation to person, place, time and event, but also their memory function, their ability to engage in associative and abstract thinking about their condition, their ability to respond rationally to questions, and their ability to apply information given to them by the providers.

A thorough test of the patient's mental status is one that assesses *orientation, registration (memory), attention, calculation, recall, and language*. This can be accomplished fairly rapidly.

- **Level of Consciousness (AVPU)** – The use of appropriate stimuli is acceptable to assist in determining a patient's level of consciousness. This may be in the form of painful stimuli through the application of pressure to the fingernail bed, however a "sterna rub" is not appropriate.
- **Awake, alert, and oriented** – Elicit and document specific/detailed responses when questioning your patient to determine A&O status.
- **Registration** – Give your patient the name of 3 unrelated items (dog, pencil, ball) and ask them to repeat and remember them because you will ask again later.
- **Attention and calculation** – Ask the patient to spell a five-letter word backwards (pound, earth, space, ready, daily, etc.) or count backwards from 100, subtracting 7's.
- **Recall** – Ask the patient to recall the 3 items identified in "registration."
- **Language** – State a simple phrase ("no if, ands, or buts") and ask the patient to repeat. Also test the patient's ability to respond to verbal commands by asking the patient to do something with an object ("hold this piece of paper" , "fold this paper in half") or

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identify two objects held up such as a watch or pencil.

Patients with impaired present mental capacity may generally be treated under implied consent. If the patient does not have the legal competency and present mental capacity to consent, and the principles of implied consent do not apply, Medical Control should be contacted for specific orders and the patient should be transported to a medical facility for further evaluation.

Patients who are treated under implied consent must have the factual findings of all present mental capacity evaluations that were performed documented in the patient care report. Factual documentation of such evaluations should include objective assessments and direct quotations whenever possible, and should avoid statements that are subjective, formed on the basis of opinion, or that represent general conclusions about the patient's mental state.

Patient Refusal of Service

All conscious, self-sufficient persons with present mental capacity retain the right to refuse service (see above for mental capacity evaluation). TAMU EMRC personnel are charged with the responsibility of assuring that patients are informed of the reasonable consequences of treatment and refusals. TAMU EMRC personnel shall attempt to have the patient (if minor: parent, guardian, etc.) read and sign the statement of refusal of care and transport. Such statement is located on the patient report. TAMU EMRC personnel shall record in their narrative report the refusal and their statements concerning information provided, any attempts at medical aid, and conditions under which the signature was obtained. The findings must be documented with facts, not conclusions, and such documentation must be sufficient to demonstrate the patient's mental status and understanding of his/her condition and the consequences of refusing treatment.

Bystanders shall witness signatures for such informed refusal, if possible. If there are no bystanders then signatures for such informed refusal shall be witnessed by another member of the Department, A Fire or Law Enforcement officer, or other Medical Personnel present at the scene.

Refusal of Signature

If an individual refuses to sign the refusal of care statement, TAMU EMRC personnel should have the refusal witnessed by a third party, preferably someone not employed by TAMU EMRC. A statement regarding the circumstances of individual's refusal to sign the statement should appear on the patient report accompanied by signature of a witness, if possible.

Refusal of Specific Treatment

Any treatment refused by the patient and ordered by a physician (Standing order or verbal) shall be reported to the medical control physician prior to acceptance of the refusal signature. TAMU EMRC personnel should explain to the patient complications that may arise from such refusal. TAMU EMRC personnel should record such refusal of specific treatment(s) and the complications about which the patient was informed. The In-Charge Paramedic shall attend to the patient during transport.

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The purpose of this policy is to provide EMS personnel with clear rules for managing situations in which the patient or the patient's representative declines or refuses care or transportation by EMS.

If a patient (or legal patient representative) requests evaluation, treatment, and/or transport from TAMU EMRC, they will be actively encouraged to seek medical care from a physician regardless of the nature of that request.

Under no circumstances will TAMU EMRC personnel refuse or deny treatment or EMS transportation to any patient (or legal patient representative) who requests medical assistance, through any means, from the agency.

TAMU EMRC personnel should not discourage any patient (or legal patient representative) from seeking medical care from a physician or from accepting EMS transport to a hospital.

All Patient Refusals involving individuals exhibiting deficits in mental capacities, or with question as to possessing legal custody of themselves, should go through the current Medical Control system in place.

All patients should have the following assessment and documentation regardless as to whether the patient is refusing transport. If the patient meets the criteria below and refuses to allow part or parts of the patient assessment, the EMS provider shall comply with the patient's request unless otherwise directed by Medical Control or law enforcement. The patient should then read and sign the Patient Refusal/Non-Transport statement documenting the fact that he was offered specific treatment and refused to allow that treatment. If any information that is not available to the medic on-scene, then the narrative should reflect that in the documentation.

A patient has to meet certain criteria prior to accepting a refusal of care. The patient should be able to demonstrate **present mental capacity (see CG 20)** in addition to:

1. His/her own name
2. Where he/she is
3. What day of the week it is **OR** what month and year it is
4. What happened
5. Patient is without neurological deficit
6. Patient history does not include recent substance abuse or alcohol ingestion

If the above criteria are not met, EMS should reject any acceptance of a patient refusal unless approval is obtained via consult.

There are specific categories of patients that are inherently difficult with which to deal. The following is a guideline to assist in making the best decision for the patient.

1. **Diabetic (hypoglycemic)** patients unconscious on scene.
If advanced care is rendered on scene and the patient becomes conscious and had an obtained blood glucose level of equal or greater than 80 mg/dl and does not wish to be transported, a Patient Refusal/Non-Transport statement should be filled out and signed. It is the responsibility of the on-scene medic to attempt to ensure that the patient is left in the company/custody of a family member, friend, or other individual that agrees to watch over that patient and is informed of the potential for recurrent hypoglycemia. That

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responsible party should also be aware of the need for medical evaluation/EMS activation should hypoglycemia return.

2. **Suicidal/Threatens** himself or others

Make sure the scene is safe and that the crew is safe prior to entry.

If the patient states that he attempted suicide, a patient refusal may not be accepted.

If the patient refuses transport, law enforcement should be called to the scene. Law enforcement will determine whether to place the patient in protective custody.

If the patient is not placed in protective custody, then Medical Control should be contacted. Law enforcement should not transport the patient who has ingested medications or has physical injuries. If law enforcement does transport the patient, the patient refusal should be signed by the highest-ranking law enforcement officer on-scene.

3. **Patients in Law Enforcement Custody**

Law Enforcement may mandate transport of a patient in custody regardless of the patient's wishes. If the patient is in custody and is in need of transport, Law Enforcement shall provide an officer who should either ride in the ambulance or follow the ambulance. **If the patient determines that he/she wants out of the ambulance during transport and law enforcement is not available, the patient should be released from the ambulance at the safest possible time.**

4. **Incompetent Adult patients** (mentally handicapped, mentally ill, Alzheimer's, OBS, etc.)

If the patient's guardian is **on scene** with a **Durable Power of Attorney**, the patient may not refuse treatment or transport for himself. If the guardian is **not oriented**, Medical Control should be contacted. If the patient's guardian **cannot prove Durable Power of Attorney**, Medical Control should be contacted. If the patient's guardian is **not present**, Medical Control should attempt to contact the guardian. If the patient's condition is urgent, the patient should be transported by standing order prior to guardian contact.

5. **Emancipated Child Patient**

Emancipation is defined as a minor (17 years or less) who is living apart from his legal guardian and who is not financially supported by his guardians.

- Pregnant female
- Person enlisted or commissioned in the U. S. Armed Forces
- Person legally declared an adult by the courts
- These patients shall be handled as adults

6. **Minor patient – Guardian present** (Minor = less than 18 years of age)

If oriented, the guardian should decide all patient care.

If the patient is a refusal, the guardian should be given the instructions and sign the paperwork. If abuse of the patient is suspected, law enforcement should be notified by the communication's center prior to leaving the scene. Law enforcement should make the final determination as to whether there is enough evidence to necessitate taking the child into protective custody and imposing medical care against the guardian's wishes.

	TAMU EMRC-EMS	PATIENT REFUSAL	
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7. Minor patient – Guardian not present (Minor = less than 18 years of age)
Minor patients who need to be transported, but are not urgent or critical, should be transported if the parent or guardian cannot be contacted after reasonable attempts have been made. The contact of a parent or guardian should be made through dispatch on a recorded line to serve as a record of consent or refusal.

Documentation on all patient refusals requires:

1. Demographic and operational information as outlined in the Documentation Policy.
2. Assessment information including the patient's/guardian's mental status, physical assessment/general appearance, and vital signs.
3. The patient/guardian was advised of any complications that may arise from not seeking medical attention.
4. Proper signature from the patient.
5. Medical Control personnel involved if Medical Control is contacted.

No Patient is defined as

1. No patient upon arrival of EMS, **OR**
2. False call, **OR**
3. Person or people on scene did not request an ambulance **AND**
Deny any physical complaint, **AND**
EMS personnel cannot visualize any injury or evidence of injury or illness **AND**
The person on scene is competent to make such a decision.
4. If the patient called for the ambulance, the "No Patient" classification no longer applies.

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AMA REFUSAL OF CARE/TRANSPORT

The purpose of this policy is to ensure that EMS personnel actively encourage a patient whose illness or injury is categorized below to accept treatment and transport. **Any patient whose complaint or injury is categorized below should be an AMA refusal if the patient refuses treatment and/or transport.**

1. ANYTIME ONE OF THE EMS CREWMEMBERS BELIEVES TRANSPORT IS INDICATED.
2. Cardio-respiratory signs and symptoms
3. Abdominal pain
4. Stabbing/Shooting
5. Overdose/Poisoning
6. Neurological
 - Seizure
 - Dysphasia
 - Hypoglycemic patients whose BG determination is < 60 mg/dl and shows signs and/or symptoms of neuro-deficit. A second BG should be obtained.
7. Pregnancy
8. Elderly (65 years or older)
 - Acute medical or surgical problem
9. Deceleration Injury, Near-Drowning, Electrocution
10. Mechanism of Injury
 - Fall from > 6 ft requires full spinal motion restriction regardless of complaint
 - Damage done to specific area in which the patient was sitting
 - Death of a person in the same vehicle
11. Abuse
 - Although these patients may not always be transport, the proper law enforcement agency should be contacted prior to leaving the scene.
12. Ejection, Rollover, or lateral impact MVAs; or any MVA with significant vehicle damage

	TAMU EMRC-EMS	OXYGEN	
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MICU

Oxygen should be maintained at the following levels to perform at peak effectiveness.

Onboard (main) cylinders:

On-Board Main O₂ should have a minimum of 300-psi. Anything less than 300-psi does not provide optimum use.

Portable cylinders:

All portable oxygen cylinders should have a minimum of 500-psi. Anything less than 500-psi does not provide optimum use.

	TAMU EMRC-EMS	THIRD RIDERS	
	Standard Delegated Orders – Clinical Guidelines	CG 23	Page 43
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Third riders are considered to be approved probationary employees, students, and/or observers that are assigned to a particular response vehicle. Only authorized persons will be allowed to ride on an EMS vehicle.

The following guidelines shall apply:

- Riders should be at least 18 years of age, or have expressed WRITTEN permission from the EMS Manager and a parental release signature on the Waiver of Liability form.
- The department scheduler and/or the Supervisor on duty should approve riders.
- Third riders shall be scheduled at least twenty-four hours in advance.
- All third riders should sign an Observer's Release from prior to riding a shift. A new release form should be signed each time an individual rides.
- Third riders should follow all requirements and rules prior to and while riding as an observer;
- It is the responsibility of all EMS personnel to assure that the rider has been approved to ride and an Observer's Release form has been signed and is on file in the administrative office;
- It is the responsibility of all EMS personnel to note the personal appearance of each rider when she/he reports to the shift. If he/she does not meet the rules and regulations pertaining to dress, he/she should be advised of such by the EMS personnel and should not be permitted to ride until she/he has complied with the rules;
- Students and observers may be asked to leave at a moment's notice due to operations and training requirements.
- The department reserves the right to limit the number of shifts of any rider.

Observers

Observers are individuals who for some personal reason may desire the experience of pre-hospital care by observation. Frequently this is a sense of EMS roles in the community and to understand the interaction of various agencies. The EMS Manager or his/her designee shall approve all citizen observers.

Non-certified observers should not be involved in the patient care process, and are only allowed to observe the EMS personnel render care to the patient. Certified observers may participate in basic level patient care at the discretion and under the direct supervision of the In-Charge Paramedic.

Be aware that representatives of the media or legal profession may observe events that they feel compelled to make public. These persons should be screened carefully and made aware of the terms of the Observer's Release form before being allowed to ride. Observers are restricted to riding between the hours of 0700-2200. Observers are not allowed later than 2200 unless prior approval and arrangements have been approved by a Supervisor or higher management member.

	TAMU EMRC-EMS	THIRD RIDERS	
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Medic-4

Probationary members may participate in patient care to their certification level at the discretion, and under the direct supervision of the senior medical member on their assigned unit.

Student Interns

TDSHS approved courses wishing to have students ride on TAMU EMRC units should have a signed affiliation agreement on file with the administrative office.

Students from outside organizations should be scheduled in advance. Administration should ensure the presence of medical liability insurance and student qualifications.

The student's role is to interact in the patient care process by performing duties in accordance with the training program's affiliation agreement and/or training objectives. The amount of involvement is to be determined by the senior medical staff member on the ambulance. Interns should perform the skills, as determined by the senior medical team leader, which fall within the practice for the certification the student is obtaining.

Interns are "in training" and should not be left in the role of providing sole care for the patient except under extraordinary conditions. Interns should not treat patients until the In-Charge Paramedic approves all decisions concerning treatment.

Acceptable Uniform

EMS third riders are to dress neatly and conservatively at all times. The generic third rider uniform shall consist of:

- Conservative-type shoes including black athletic type shoes or boots may be worn. It is recommended that sturdy shoes be worn. Sandals are prohibited.
- Black or navy EMS type pants should be worn.
- White uniform shirt or dress shirt, or plain white polo-style shirt should be worn.
- Blue jeans, shorts, and t-shirts are prohibited.
- Hair should be groomed. Cleanliness and appropriate physical hygiene are required at all times.

Observers from approved first responder organizations will be allowed to wear their department uniform.

Recognized EMS training programs may negotiate an acceptable, alternative uniform for EMS students.

The EMS Manager or his/her designee may approve specific apparel for special circumstances such as physicians, nurses, or media representatives.

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Run Records

Students and observers should not complete official run records for TAMU EMRC. Probationary employees may complete records under the direct supervision of the preceptor. That person should co-sign the run record. All third riders' identities should be documented on medical reporting forms.

Conduct

All EMS observers are to conduct themselves with proper decorum. Observers are to refrain from the following:

- Use of alcoholic beverages 12 hours prior to and during the shift;
- Use of profane or abusive language;
- Use of excessive conversations which may interfere with radio communications while riding in unit;
- Making remarks, or voicing opinions to patients or family members, bystanders, police officers, fire personnel, or first responders in any manner, which would tend to provoke or degrade anyone or escalate tension/anxiety;
- Making known to any person not authorized, any information concerning the emergency call, patient information or outcome;
- Using information gained through EMS third rider program for personal gain; and
- Wearing on their clothing any article, sign or symbol that advertises any product, business or organization.

Conclusion

All third riders are subject to removal for any violation of the above rules and regulations. Crewmembers are responsible for the appearance and conduct of third riders. Should problems arise, it is recommended that a Supervisor be notified of the incident.

	TAMU EMRC-EMS	NON-EMERGENCY ASSIST CALLS	
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TAMU EMS will respond to all requests for assistance. In all cases, EMS personnel should attempt to aid the person requesting assistance.

Non-emergency Assists

TAMU EMS personnel should respond non-emergency to known non-emergency assist calls. Should there be doubt of the emergency nature of the request, personnel should respond emergency traffic.

Chronic System Abuse

Instances of repeated abuse of the EMS system by a member of the public should be reported to the on-duty Field Supervisor. Personnel should make every attempt to professionally educate the calling party of a more appropriate method of obtaining assistance.

Repeated EMS system abuse, despite good faith efforts to intervene, should be referred to the EMS Manager. If determined necessary, the EMS Manager may refer the situation to the Medical Director.

Malicious False Alarms

In instances of malicious false alarms, EMS personnel should advise Communications of the nature of the event. Law enforcement assistance should be requested if the calling party can be identified. TAMU EMS personnel should not confront the alleged calling party.

	TAMU EMRC-EMS	CONFIDENTIALITY	
	Standard Delegated Orders – Clinical Guidelines	CG 25	Page 47
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Healthcare professionals have an important ethical and legal duty to guard and respect the confidential nature of the information conveyed during patient contact. All personnel implicitly promise to preserve patient confidentiality.

Under the *Tex. Health & Safety Code Ann. § 733.091(g)*, the following items are not considered confidential information and may be disclosed:

- Information regarding the presence, nature of injury or
- Illness
- Age
- Sex
- Occupation
- City of residence of a patient

Confidentiality is not absolute. Confidential patient information may be disclosed when patients or their legal guardians agree to the disclosure, when mandated by law, or when there exist compelling or overriding ground for the disclosure, such as prevention of substantial harm to identifiable other persons. See *Tex. Health & Safety Code Ann. § 733.091-095*.

Disclosure of confidential patient information is a serious transgression, and in some cases is considered a criminal offense. Employees that violate patient confidentiality should be called upon to justify their actions and may be subject to disciplinary action.

Employees may be questioned about past responses by law enforcement, attorneys, insurance agencies, or other agencies. When this occurs, those persons should be directed to a Supervisor or the custodian of records. Patient Care Records are confidential and can generally only be released by a subpoena.

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Out of Hospital Do Not Resuscitate (DNR) / Dead on Scene (DOS)

Withholding, Terminating, and Limiting Resuscitation

This protocol shall provide the guidelines, standards and orders for managing situations involving the withholding, termination or limitation of resuscitative efforts in the terminally ill or fatally injured patient. This protocol addresses the following issues:

- Apparently non-viable cardiac arrest cases (dead on scene)
- Do not attempt resuscitation requests
- Directive to physicians, Living Will directives or other directives which limit care to a terminally ill patient.

Apparently Non-Viable Cardiac Arrest (Dead on Scene)

The criteria for this component of the protocol is a **pulseless and apneic patient** in whom there is some question as to whether to initiate or continue resuscitative measures.

TAMU EMRC personnel are authorized to withhold or discontinue resuscitative measures in cases of:

- Multi-patient incidents as described in the Multi-patient / Triage protocol
- Decapitation
- Decomposition
- Rigor mortis (in the non-hypothermic patient)
- Dependent lividity
- Incineration
- Visible trauma to the head or chest that is **clearly** incompatible with life
- Valid Do Not Attempt Resuscitation directives as described in this protocol.

When any patient meets the above criteria, access to the scene should be limited as much as possible with special attention to disturb the scene as little as possible. Every effort should be made to provide support for the family, friends, survivors as well as any witness to the event.

A directive to withhold resuscitative measures shall not prevent EMS from providing appropriate emergency care to ease suffering such as oxygen administration, airway suctioning, authorized analgesia, and palliative care.

State of Texas Out-of-Hospital Do-Not-Resuscitate Orders:

The individual executing the OOH DNR agrees to have **ALL** of the following procedures withheld:

- Cardiopulmonary resuscitation
- Advanced airway management
- Artificial ventilation
- Transcutaneous pacing
- Other life-sustaining treatment specified by Texas Board of Health.

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Palliative Care

The provision of palliative (comfort) care and pain management is acceptable if the patient presents with a pulse and spontaneous respirations. Examples of palliative care include:

- Oxygen therapy
- Suction
- IV Therapy
- Hemorrhage control
- Pain management

To **withhold** resuscitation in the patient who becomes pulseless or apneic the following criteria **SHOULD** be met:

- An **official colored** TDSHS OOH DNR identification bracelet or necklace is being worn by the patient **OR**
- An **official or photocopied** TDSHS OOH DNR order is presented upon patient contact with all necessary patient information, signatures and boxes completed and present on the form. (**SB 1260** changes this section to read “**photocopy or other complete facsimile of the original** written out-of-hospital DNR order executed under this subchapter may be used for any purpose which the original written order may be used under this subchapter.”) **OR**
- The patient’s private physician is either on-scene or via phone directs the provider to withhold any resuscitative efforts.

The Texas DNR form is **not** to be honored and full resuscitative efforts, including BLS and ACLS are to be initiated, if any of the following conditions exist:

The Patient:

- Destroys the form and removes the identification device **OR**
- Directs someone in their presence to destroy the form and remove the identification device **OR**
- Communicates to the responding health care professionals or attending physician that it is his/her intent to revoke the order **AND**
- Notifies the attending physician (if not present) that the order has been revoked.

The Person who executed the order:

- Destroys the form and removes the identification device **OR**
- Directs someone in their presence to destroy the form and remove the identification device **OR**
- Notifies the attending physician (if not present) that the order has been revoked.

The attending physician: (or his/her designee)

- If present at the time of revocation, records in the patient’s medical record the time, date and place of the revocation **OR**
- If not present, records the time, date and place that the physician received notice of the revocation **AND**
- Enters the word “VOID” on each page of the copy of the order in the person’s medical record.

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In addition to the above, the Texas DNR order is not to be honored if:

- The patient is known to be pregnant
- Unusual or suspicious circumstances are involved (suspected homicide or suicide)
- Suspected criminal activity involving the patient.

If Any of These Reasons for Revocation Are Met the Provider Should:

- Initiate full resuscitative efforts.
- Record the time, date and place of the revocation for DNR order revocation incident reporting to the Texas Department of State Health Services by the TAMU EMS Clinical Department.

Note: Senate bill 1260 provides for the consolidation of all chapters related to Out-of-Hospital DNR orders and advanced directives. These changes became effective September 1, 1999.

- The person initiating a DNR does not have to be diagnosed with a terminal condition.
- The document specifies the treatment rather than the procedures a person or legally authorized representative directs health care providers in an out-of-hospital setting not to initiate or continue.
- The out-of-hospital setting as a location in which health care professionals are called for assistance is expanded to include hospital outpatient or emergency departments and physicians offices.
- Requires the form to include certain physicians, a separate section for execution of the document by at least one, rather than two, qualified relatives and a statement that allows certain persons to make certain decisions (medical power of attorney)
- **OUT-of-STATE DNR orders are** acceptable if there is no reason to question the authenticity of the orders or device.

All other cases should require authorization from field medical control or an on-line medical control physician.

In **ALL** DNR cases, the EMS crew should be completely confident in the authenticity of the documentation or device and in the patient's identification. If there is any doubt about the validity of the paperwork involved, always begin patient care. The on-duty Supervisor or an on-line physician should determine whether to continue or terminate care.

Resuscitation efforts may not be withheld from a person known by the health care professional to be pregnant.

Documentation requirements for out of hospital DNR:

1. Assessment of the patient's physical condition.
2. Type of device used to confirm DNR status including patient identification number.
3. Any problems related to the implementation of the DNR order.
4. Patient's attending physician.
5. Full name, address, telephone number and relationship to patient of any witnesses used to identify the patient.
6. If the patient is transported, the original DNR should be kept with the patient.
7. If the patient is not transported, the original DNR order should be left with the concerned parties or health care facility.

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Should the patient expire prior to initiation of transport by EMS, the EMS crew shall:

1. Discontinue all medical care.
2. Prepare the body for viewing by the family and/or friends.
3. Allow the family/friends to view the body as they wish. Answer any questions regarding the patient's clinical status upon your arrival and your actions, to the best of your ability.
4. Notify Medical Control of the situation
5. Notify, via the dispatch center, the appropriate law enforcement agency of an out-of-hospital death.
6. Complete all appropriate documentation.
7. Release the scene to law enforcement upon their arrival, providing them with a copy of the documentation.

If a patient who is under a valid DNR directive becomes pulseless and apneic *during* transport, the EMS crew shall:

1. Note the time the patient became pulseless and apneic.
2. Continue any care that is in progress at that point (e.g., oxygen administration, etc.).
3. DO NOT initiate any additional medical care.
4. Continue transport, in non-emergency traffic mode, to the destination facility.
5. Upon arrival at the destination facility, release the patient to the appropriate health care professional. Notify the receiving health care professionals that the patient became pulseless and apneic during transport and that, as per the patient's binding directive, EMS did not treat the cardiac arrest.
6. Complete all appropriate documentation and leave copies with the receiving facility.

Limitations of Care

Competent adult patients have the right to select the care they receive from health care professionals. This right extends to emergency situations, the out-of-hospital care arena and even to resuscitation and end-of-life cases.

This right may be exercised verbally by a competent adult patient (as described and defined in the Consent and Refusal policy). This right may also be exercised by written directive, executed by a patient when s/he was competent, even if that patient is no longer competent to consent to or refuse care. Last, selection and limitation of healthcare options and procedures may be exercised by a duly authorized representative of the patient (family member or representative empowered to do so by a Durable Power of Attorney) in cases where the patient is incompetent or unable to communicate their wishes.

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A directive to withhold or limit resuscitative measures shall not prevent EMS from providing appropriate emergency care to ameliorate suffering, such as oxygen administration, airway suctioning, or authorized analgesia.

Should EMS personnel encounter a patient with an apparent terminal condition or in whom there is reason to believe the patient and/or family may wish to limit the care administered to the patient by EMS, the EMS personnel shall:

1. Determine the presence or absence of any written or verbal directive pertaining to limitations of care. If there is a written directive, review it carefully and clarify any unclear components with the patient and/or patient's authorized representative.
2. Discuss the treatment options available to the patient from EMS with either the patient (if competent and able to communicate) or the patient's authorized representative.
3. Clarify the interventions to which the patient (or representative) does and does not consent, prior to initiating transport.
4. Comply with the patient's limitations and/or directives. If there is any doubt or concern about the validity or appropriateness of a directive to limit or withhold care, contact medical control immediately.
5. Document the directive(s), either written or verbal, received from the patient or representative on the EMS chart.

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Figure: 25 TAC §157.25 (b)(2) Page 1 of 2

STOP DO NOT RESUSCITATE

**TEXAS DEPARTMENT OF STATE HEALTH SERVICES
STANDARD OUT-OF-HOSPITAL DO-NOT-RESUSCITATE ORDER**

This document becomes effective immediately on the date of execution. It remains in effect until the patient is pronounced dead by authorized medical or legal authority or the document is revoked. Comfort measures will be given as needed.

All persons who sign the form must sign again under number 3.

1. _____ Date of Birth: _____ Male/Female (Circle One)
Patient's full legal name — printed or typed

2. COMPLETE ONE OF THE FOUR BOXES: A, B, C, or D. If using Box A, B, or C, Witnesses and Physician's Statement must be completed.

A. Patient's Statement: I, the undersigned, am an adult capable of making an informed decision regarding the withholding or withdrawing of CPR, including the treatments listed below, and I direct that none of the following resuscitation measures be initiated or continued: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature _____ Date _____ Printed or Typed Name _____

B. Only use this box if the order is being completed by a person acting on behalf of an adult patient who is incompetent or otherwise unable to make his or her wishes known.

I am the patient's: ☐ legal guardian; ☐ agent under Medical Power of Attorney; ☐ or Qualified Relative (see back); AND:

☐ I attest to issuance of an Out-of-Hospital DNR by the patient by nonwritten means of communication; OR
☐ I am acting under the guidance of a prior Directive to Physicians; OR
☐ I am acting upon the known values and desires of the patient; OR
☐ I am acting in the patient's best interest based upon the guidance given by the patient's physician.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature _____ Date _____ Printed or Typed Name _____

C. Only use this box if the order is being completed by a person acting on behalf of a minor patient who has been diagnosed with a terminal or irreversible condition.

I am the minor patient's: ☐ Parent; ☐ legal guardian; or ☐ managing conservator.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature _____ Date _____ Printed or Typed Name _____

WITNESSES: (see qualifications on reverse) We have witnessed all of the above signatures.

Witness 1 Signature _____ Date _____ Witness Printed or Typed Name _____
Witness 2 Signature _____ Date _____ Witness Printed or Typed Name _____

PHYSICIAN'S STATEMENT: I, the undersigned, am the attending physician of the patient named above. I have noted the existence of this order in the patient's medical records, and I direct out-of-hospital health care professionals to comply with this order as presented.

Date _____ Physician's signature _____ Printed name _____ License number _____

D. Only use this box if the order is being completed by two physicians acting on behalf of an adult who is incompetent or otherwise unable to make his or her wishes known, and who is without a legal guardian, agent, or qualified relative.

☐ I attest to issuance of an Out-of-Hospital DNR by the patient by nonwritten communication; OR
☐ The patient's specific wishes are unknown, but resuscitation measures are, in reasonable medical judgement, considered ineffective in these circumstances or are otherwise not in the best interest of the patient.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature _____ Treating Physician _____ Date _____ Printed or Typed Name _____
Signature Second Physician who is not involved in treating the patient _____ Date _____ Printed or Typed Name _____

3. ALL PERSONS WHO SIGNED MUST SIGN HERE (Pursuant to H&SC 166.083(b)(13). This document has been properly completed.

Signature of Patient, Agent or Relative (A, B, or C) _____ Signature of Second Physician (D) _____ Signature of Attending Physician _____
Signature of Witness _____ Signature of Witness _____ Date _____

SHOULD TRANSPORT OCCUR, THIS DOCUMENT OR A COPY MUST ACCOMPANY THE PATIENT

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Figure: 25 TAC §157.25 (b)(2) Page 2 of 2

OUT-OF-HOSPITAL DNR INSTRUCTIONS

PURPOSE:
This form was designed to comply with the requirements as set forth in Chapter 166 of the Health and Safety Code (H&SC) relating to the issuance of Out-of-Hospital Do-Not-Resuscitate (DNR) orders for the purpose of instructing Emergency Medical Personnel and other health care professionals to forgo resuscitation attempts and to permit the patient to have a natural death with peace and dignity. This order does NOT affect the provision of other emergency care including comfort care.

APPLICABILITY:
This form applies to all health care professionals operating in any out-of-hospital setting to include hospital outpatient or emergency departments and physician's offices.

IMPLEMENTATION:
A competent adult may execute or issue an Out-of-Hospital DNR Order. The patient's attending physician will document the existence of the directive in the patient's permanent medical record.

If an adult patient is capable of providing informed consent for the order, he/she will sign and date the out-of-hospital DNR order on the front of this sheet in Box A. In the event that an adult patient is unable to provide informed consent, his/her Legal Guardian, agent under Medical Power of Attorney, or Qualified Relative may execute the order by signing and dating the form in Box B. If an adult patient is unable to provide informed consent and none of the persons listed in Box B are available, the treating physician may execute the order using Box D with the consent of a second physician who is not treating the patient and/or is a member of the health care facility ethics committee or other medical committee.

The following persons may execute an out-of-hospital DNR order on behalf of a minor: the minor's parents, the minor's legal guardian or the minor's managing conservator. A person executing a DNR order on behalf of a minor may execute the order by signing and dating the form in Box C. An out-of-hospital DNR order may not be executed unless the minor has been diagnosed by a physician as suffering from a terminal or irreversible condition.

The form must be signed and dated by two witnesses except when executed by two physicians only (Box D).

The original standard Texas Out-of-Hospital DNR form must be completed and properly executed. Duplicates may be made by the patient, health care provider organization or attending physician as necessary. Copies of this completed document may be used for any purpose that the original may be used and shall be honored by responding health care professionals.

The presence of a Texas DNR identification device on a person is sufficient evidence that the individual has a valid Out-of-Hospital DNR Order. Therefore, either the original standard form, a copy of the completed standard form, or the device is sufficient evidence of the existence of the order.

For information on ordering identification devices or additional forms, contact the Texas Department of State Health Services at (512) 834-6700.

REVOCATION:
The Out-of-Hospital Do-Not-Resuscitate Order may be revoked at ANY time by the patient OR the patient's Legal Guardian/Agent/Managing Conservator/Qualified Relative, Parent (if a minor), or physician who executed the order. The revocation may involve the communication of wishes to responding health care professionals, destruction of the form, or removal of all or any Do-Not-Resuscitate identification devices the patient may possess.

AUTOMATIC REVOCATION: This Out-of-Hospital DNR order is automatically revoked if the patient is known to be pregnant or in the case of unnatural or suspicious circumstances.

DEFINITIONS:
Attending Physician: The physician who is selected by or assigned to a patient who has primary responsibility for a person's treatment and care and is licensed by the Texas State Board of Medical Examiners or who is properly credentialed and holds a commission in the uniformed services of the United States and who is serving on active duty in this state. (H&SC 166.002 (3) & (12))

Qualified Relatives: Those persons authorized to execute or issue an out-of-hospital DNR order on behalf of a person who is comatose, incompetent, or otherwise mentally or physically incapable of communication under Section 166.088 H&SC Section 166.088 refers to 166.039: "One person, if available, from one of the following categories, in the following priority.... (1) The patient's spouse; (2) the patient's reasonably available adult children; (3) the patient's parents; or (4) the patient's nearest living relative."

Health Care Professional: Means physicians, nurses, physician assistants and emergency medical services personnel, and, unless the context requires otherwise, includes hospital emergency department personnel. (H&SC 166.081 (5))

Witnesses: Two competent adult witnesses must sign the form acknowledging the signature of the patient or the person(s) acting on the patient's behalf (except when signed by two physicians in Section C). Witness One must meet the qualifications listed below. Witness Two may be any competent adult. Witness One (the "qualified" witness) may not be: (1) person designated to make a treatment decision for the patient; (2) related to the patient by blood or marriage; (3) entitled to any part of the estate; (4) be a person who has a claim against the estate of the patient; (5) the attending physician or an employee of the attending physician; (6) an employee of a health care facility in which the patient is being cared for, if he or she is involved in providing direct patient care to the patient; or (7) an officer, director, partner, or business office employee of a health care facility in which the patient is being cared for or any parent organization of the health care facility.

Please report any problems with this form to the Texas Department of State Health Services at (512) 834-6700.

Revised July 19, 2005
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APPROVED TRANSPORT FACILITIES

Personnel should attempt to balance the needs of the patient with the needs of the system in selecting a destination. Also, consideration should be given to the current hospital status listed on EMSsystems.

Routine Destinations

The following Hospitals are within our transportation area and are approved for transport on a routine basis:

- College Station Medical Center
- St. Joseph Regional Health Center
- St. Joseph Emergency Center – College Station

Other Facilities

The following facilities are within our transportation area and are approved for transport on a special-needs basis:

- A.P. Beutel Student Health Services – requires authorization from the receiving Immediate Care physician prior to transport
- St. Joseph – Grimes County – requires that patient be accepted for psychiatric evaluation prior to transport
- The Physician's Centre – approved transport destination for isolated orthopedic injuries. Also authorized in cases where stable TAMU athletes are being transported and the team physician and athletic trainers request transport to The Physician's Centre for surgical intervention.

Please refer to the Facility Diversion Guidelines for more specific information on diversion.

Designated and non-designated facilities play an important integral role in the trauma system. Patient's with multi-system, blunt or penetrating trauma who are hemodynamically unstable and/or have respiratory compromise or altered mental status should be triaged and transported by EMS personnel to the nearest **appropriate trauma facility**. Mechanism of Injury alone does not mandate transport to a trauma facility in the patient without hemodynamic or anatomic criteria. The definition of appropriate facility is as follows:

A hospital, not necessarily the nearest hospital, with the resources and capability to care for a patient based upon the patient's medical needs.

Non-designated facilities play a very important role in trauma care. These facilities, based upon their available resources and capabilities, should transfer trauma patients rapidly to an appropriate level trauma center in accordance with applicable transfer laws.

Patient rights should be respected in the determination of hospital destination. In the event a competent trauma patient requests a destination discordant with the destination recommendation of the EMS provider, the EMS system on-line direction source should be contacted.

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EMS systems should promptly notify facilities in order to allow for timely facility-specific trauma team alert mechanisms to be activated.

Trauma Designations of local receiving facilities:

- | | | |
|----|------------------------------------|-----------|
| 1) | College Station Medical Center | Level III |
| 2) | St Joseph's Regional Health Center | Level III |
| 3) | St. Joseph's – Grimes County | Level IV |
| 3) | Scott and White Hospital – Temple | Level I |
| 4) | Memorial-Hermann – Houston | Level I |

Level I:

Comprehensive trauma facility and tertiary care facility that has the resources and vide total care for every aspect of injury continuum from research and prevention through rehabilitation.

Note: Level I facility has neurosurgery available 24 hours/day.

Level II:

Major trauma facility that has the resources and capabilities to provide definitive trauma care to injury patients but may not be able to provide the same spectrum of care as a Level I trauma center.

Note: Facility does not do research

Level III:

General trauma facility that has the resources and capabilities to provide resuscitation, stabilization and assessment of trauma patients and can either provide treatment or arrange for appropriate transfer to a higher level trauma facility.

Note: Facility has trauma surgeon available 24 hours/day.

Level IV:

Basic trauma facility that has the resources and capability to provide resuscitation, stabilization or arrange for appropriate transfer of all trauma patients with major and severe injuries to a higher level trauma facility.

Note: Facility **does not** have trauma surgeon available 24 hours/day.

All facilities with Level III and Level IV designations are members of a trauma network. They are able to transfer patients to a more appropriate facility very quickly, often making transfer arrangements while the patient is being evaluated and stabilized. It is an appropriate use of resources to transport trauma patients to these facilities for evaluation. This prevents the Level I and Level II centers from being overwhelmed with patients that are not seriously injured.

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Acute Coronary Syndrome Patients – Cath capable facilities

1. College Station Medical Center
2. St. Joseph Regional Health Center

Strokes – onset symptoms < 2 hours*

1. College Station Medical Center
2. St. Joseph's Regional Health Center

Strokes – onset symptoms 2 – 7 hours*

1. St Joseph Regional Health Center
2. The Methodist Hospital – Main (Houston)
3. Scott & White – Temple

Strokes – onset symptoms > 7 hours or undetermined*

1. College Station Medical Center
2. St. Joseph Regional Health Center

***Eligibility, inclusion, exclusion evaluation criteria may require up to 1 hour of the treatment window at any facility—please consider this in your destination selection.**

Burns

- Inhalation
- Burns to hands
- 30% TBSA 2nd degree or higher
- < 12 or > 65 years of age

1. UTMB
2. Memorial-Hermann Hospital

Therapeutic Hypothermia Patients – Approved “Cooling” Facilities

1. College Station Medical Center
2. St. Joseph Regional Health Center

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Diversion is a courtesy extended by TAMU EMRC to a hospital facility, rather than a right to be demanded by hospitals. This policy reflects the guidelines for diversion established by the TAMU EMRC. The most current status of a hospital is available on the EMSsystem.

Definitions

Appropriate Facility: A hospital, not necessarily located nearest the scene of an incident, that possesses the resources and capability to care for a patient based upon the patient's specific medical needs.

Bypass: The intentional movement of a patient from the scene of an incident to a specific hospital, not necessarily the nearest hospital, based upon the patient's medical needs.

Diversion: The intentional movement of a patient from the scene of an incident to an alternate hospital capable of caring for the patient at the request of that hospital because they advise that current circumstances indicate that hospital lacks the available resources or capability to treat the patient.

Transfer: The movement of a patient from one hospital to another hospital based upon the patient's medical needs. This procedure is also known as inter-hospital transport.

Diversion Activation

It is the responsibility of the designated hospital administrator to update the EMSsystems status board through their individual log-on entry. The system requires frequent updating. Currently that is the system in place for indicating a hospital status.

Diversion Activation Categories

A request for diversion may be honored if any of the following conditions is reported by the requesting hospital:

- Emergency Department (ED) saturation;
- Intensive Care Unit (ICU) saturation;
- Operating Room (OR) saturation;
- Equipment repair or maintenance; or
- Internal disaster.

TAMU EMRC personnel should absolutely honor a hospital's diversion requests based on internal disaster.

Communication of diversion status

- **A hospital should update the EMSsystem status board frequently if status changes.**
- **A hospital should indicate the reason for their listed status.**
- Communications should notify the on-duty Supervisor and duty crews of diversion status and reason for diversion.

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Time Period for Diversion Status

- A hospital may deactivate a diversion request at any time.
- Diversion requests are effective for up to 4 hours, however, may be extended if necessary.
- A hospital should update EMSsystem to indicate continued status.
- Failure by a hospital to update the system maybe considered to be off diversion status.

Authorization for Override of Diversion Requests

When a facility requests to be placed on diversion status, TAMU EMRC personnel should attempt to divert appropriate patients to other facilities whenever possible. TAMU EMRC personnel should consider the condition of the patient, distance to alternate facilities, and the diversion status of alternate facilities in determining the destination for the patient.

System Monitoring and QI

TAMU EMRC should document and report to the BVRAC QI Committee those situations in which a diversion request has not been honored or has been overridden by the on-line medical direction source.

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Due to extended transport times to definitive trauma centers, it is sometimes in the best interest of the critically ill and/or injured patient to have them transported via helicopter. The utilization of helicopters as a means of rapid transport for critically ill or injured patients is an additional tool that allows TAMU EMRC to provide the highest level of care.

Indications for Air Medical Utilization

Utilization should be based on the following criteria:

- The aircraft can deliver the patient to definitive care **faster** than ground transportation.
- When transportation to a Level I or Level II Trauma Center is indicated and ground transportation time is greater than 30 minutes.
- When specialized services are required that local receiving hospitals are not equipped to provide.
- Severely injured patient(s) with extended extrication times (> 30 min)
- Mass casualty situations where EMS resources are exhausted.
- Known or suspected head or spinal injuries **with** significant neurological deficits.
- New neurological deficits/impairment in the presence of signs and symptoms suggestive of an acute intracerebral process that meets criteria established by BVRAC.
- Significant (urgent or critical) burns requiring a burn center.
- Burns associated with significant injuries.
- 2nd degree burn involving hands, feet, genitalia and face.
- Inhalation burns.
- Significant Chemical burns.
- Significant Electrical burns.
- Pediatric trauma and/or burns of any significance.

Air Medical Resources **should not** be used in the following instances:

- Pending arrest.
- Trauma that can be managed at a Level III and/or Level IV facility.

It is acceptable practice to transport a trauma patient to a closer facility for evaluation by the emergency department physician. Often times patients appear to be more seriously injured than they actually are. Following these guidelines allows the TAMU EMRC system to utilize trauma facilities and Air Medical Services in a way that best meets the needs of the patients and communities they serve.

Coordination of Air Medical Utilization

Responsibility for overall command and control rests with the Incident Commander (IC) as outlined in the Joint EMS/Fire Department Operations policy. The highest-ranking TAMU-EMS on-scene should assume the role of EMS Sector officer and have the ultimate responsibility for patient care. EMS Sector is responsible for keeping the IC informed of patient condition and status and any manpower, equipment, or other needs that may arise.

An Air Medical Provider (AMP) may be **placed on standby** by:

- Calltaker
- Responding EMS unit
- First Responders on scene
- Fire personnel on scene
- Law enforcement on scene

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Air Medical **should not** be launched until one of the following occurs.

- Supervisor on scene requests AMP
- EMS unit is on scene and has made a determination that AMP is needed.

The person requesting Air Medical Provider assistance shall provide Communications with the following information:

- Medic number
- Brief report of patient condition
- A precise location of the patient
- Any unusual circumstances (bad weather, power lines down, etc.)

Communications should provide the following information to the AMP communicator:

- Requesting agencies name and callback number
- Exact scene location including street address, etc.
- Reason for the request.
- Type and extent of injury if known.
- Number of patients.
- Ground contact and the radio frequency to be utilized.

Once the aircraft is enroute, the authority to terminate a request for services shall lie solely with the EMS sector officer, who, if different from the In-Charge providing primary patient care, should rely on the judgment of the In-Charge providing primary patient care.

Additionally, the pilot has the authority to terminate the air medical response.

The primary responsibility for patient care lies with the TAMU EMRC In-Charge.

The Incident Command is responsible for overall scene safety and may designate a Safety Sector officer to assist in that role. The IC and or the EMS sector officer should directly relay patient information to the helicopter when requested by the Air Medical Pilot.

The pilot is responsible for all aspects of the aircraft and shall make the final determination regarding any safety issues that directly effect safety of the aircraft and crew. (LZ location, weather, additional riders)

Landing Zone (LZ) Requirements

During normal daylight hours the LZ should be at least 60 x 60 feet. Additionally, it should be marked with one traffic cone at each corner and one traffic cone on the upwind side.

During nighttime hours the LZ should be at least 100 x 100 feet with lighted cones at each corner and one lighted cone on the upwind side. Additionally, all emergency vehicles should turn off all emergency lights, especially strobe lights.

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Intent

The following policy will define the usage and tracking of all scheduled injectables (controlled medications) within the TAMU EMRC System. The goal of the policy is to ensure chain of custody as well as documentation of two (2) TAMU EMS employee signatures that all controlled medications are accounted for at the beginning and end of each shift.

The procedures contained in this document constitute guidelines only. The Clinical Department cannot anticipate all extraordinary circumstances that may occur during patient care and the administration of controlled medications. Unusual events should be investigated and addressed on a case by case basis and reviewed by the EMS Manager and the Medical Director to ensure necessary safeguards are in place to maintain the chain of custody required by Federal and State Rules and Regulations. Failure at any time to maintain the chain of custody for controlled medications as described in these guidelines could result in disciplinary action for all involved TAMU EMS employees up to and including termination.

General Information

Ideally, the controlled medications should be signed for at the beginning of each shift with the “off-going” and “on-coming” In-Charge EMT-P’s present. The sign in sheet should reflect the number of controlled medications counted with documentation of each of the unique numbers assigned or a *Controlled Substance Usage and Tracking Form* to account for any controlled medications administered during the previous shift that have not been replaced by a Supervisor. The on-coming Paramedic should sign in the “on-coming” space as receiving the controlled medications and the Paramedic leaving signs as “off-going” to document transfer of medications. Failure to count and sign for the controlled medications at the beginning of shift may result in disciplinary action for all In-Charge paramedics involved, including, but not limited to the following:

- | | |
|--------------------------|--|
| 1 st offense- | Written warning (coaching/counseling form) |
| 2 nd offense- | 1 st level notice |
| 3 rd offense- | 2 nd level notice |
| 4 th offense- | 3 rd level notice (termination) |

It is unacceptable for the In Charge paramedic on shift to sign out BEFORE the end of shift (you should not sign in and out at the same time). Failure to comply may result in disciplinary action.

Policy violations remain on file for a twelve-month period. If an employee has no other occurrences during that time the policy violation is expunged from their record.

Late Calls

In the event that a medic unit is assigned an emergency response near the end of shift before transfer of the controlled medications can be completed as described above, or the oncoming In-Charge EMT-P arrives on the scene of an assigned response and assumes patient care, the following guidelines should be followed. The In-Charge paramedic should complete the sign-in sheet as soon as possible after the call is completed with his/her attendant partner as the witness. Signatures go in the “on-coming” signature box to ensure chain of custody and document the Incident Number of the late call in the “off-going” signature box on the tracking form. This will indicate to the Clinical Department as well as the Supervisor why the signature is missing and that disciplinary action is unnecessary.

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Peak and Special Event Units

TAMU EMS employees assigned to a Peak Unit (In-Charge and Attendant) or covering a Special Event (refer to CG 12 in protocols), when a face-to-face exchange of the controlled medications with an off-going crew is not practical, the controlled medications should be counted with their partner and both employee signatures should be in the “on-coming” space. At the end of shift this process should be repeated as the “off-going” crew and the controlled medications should be secured.

Administration and Replacement of Controlled Medications

Controlled medications are administered only after a person with appropriate medical authorization has ensured that the patient meets criteria as outlined in the specific SDOs. Paramedic students are allowed to administer controlled medications and other medications under the direction of their preceptor.

After administration of a scheduled injectable, the Paramedic administering the medication should complete the appropriate fields of a Controlled Substance Usage and Tracking Form. Scheduled Injectables **will not** be replaced by the supervisory staff without complete documentation of usage. Only TAMU EMS employees should witness the disposal of any unused controlled medication and their name and signature should be documented on the replacement form. If the controlled medication was administered by a student, the preceptor should complete the top portion of the replacement form and have his/her partner witness the waste of controlled medications that were not administered to the patient. Contact the Supervisor as soon as possible for replacement.

The completed usage and tracking form should remain with the controlled medications as it documents why a specific medication is missing and the unique tracking number assigned to the controlled medication should be documented in the PCR.

As long as the scheduled injectable usage has been properly documented, the ambulance may remain in-service with the minimum of one of each scheduled injectable while awaiting replacement. A unit should be placed out of service anytime all of one substance has been used.

Expired Controlled Medications

All medications should be checked frequently for expiration dates and may be administered through the end of a month (e.g. expires 6/07), unless the expiration date specifies the day of the month (e.g. 6/20/07). If possible, medications nearing their expiration date should be administered first in appropriate situations as scheduled injectables cannot be returned or exchanged. A Supervisor should be contacted for replacement before the medication expires. Units with expired medications may result in disciplinary action for all In-Charge Paramedics who have been responsible for maintaining the chain of custody for the controlled injectables.

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Reverse Controlled Medication Disposal for Expired Medications and/or Compromised Security Seals

To ensure compliance with Federal DEA and State Laws, the following procedure will be followed for replacing expired controlled medications:

- Contact your Supervisor and advise them you have controlled medications that are expired/expiring.
- The expired controlled medications should be exchanged with the Supervisor with the Tamper Resistant Seal intact and completed paperwork. The Supervisor will return the expired controlled medications to the central stock for disposal.
- Controlled medications that are discovered with broken seals should be exchanged as they are with an unusual occurrence report attached to the *Controlled Substance Usage and Tracking Form* describing how you found the controlled medication. The replacement form and the compromised controlled medication should be returned to the central stock for disposal.

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The Texas Food Drug and Cosmetic Act states that a drug or medical device is deemed adulterated if it is stored under conditions that result in the product's safety or effectiveness being compromised. Drugs and medical devices that are stored in places that do not have proper environmental controls may become ineffective or dangerous. Products that are stored improperly in vehicles (i.e. ambulances, personal vehicles) are considered adulterated products and unsafe for human use. Guidelines for the proper storage of drugs and medical devices are generally recommended by the manufacturer of the product. Where no guidelines are listed on drug labels, the United States Pharmacopoeia recommends that products are stored at room temperature, away from humidity, and where necessary, away from light. For those devices that are not labeled with storage requirements, care should be taken to avoid extremes of temperature, humidity and light. All labels should be read and checked prior to storage. It is the responsibility of the operator to make sure that proper storage requirements are met. The Texas Department of State Health Services has the authority to detain and take action against those products that do not meet storage criteria. **Rule Reference:** 25TAC 157.11

Interpretation:

The EMS provider licensure or relicensure applicant shall provide evidence of an operational policy which shall list the pharmaceuticals authorized by the medical director and which shall define the storage and maintenance procedures for each in accordance with the manufacturers and/or FDA recommendations. Compliance with the policy shall be incorporated into the provider's Quality Management process and shall be documented on the unit readiness reports.

TAMU EMRC has adopted the following policy to assure compliance with the above mentioned rule. Medications and medical devices listed within this manual shall make use of the vehicle climate control system when the vehicle is in operation. During times when the vehicle is not in use, a generator-powered climate control system shall be utilized to maintain a constant temperature range. Extra items stored at stations for replacement shall be stored within a cabinet inside each station. Temperature control shall be maintained by keeping a thermostat at a consistent setting within the station.

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Card 1 – Abdominal Pain/Problems

- 01A01 Abdominal Pain
- 01C01 Suspected aortic aneurysm ≥ 50
- 01C02 Known aortic aneurysm
- 01C03 Fainting or near fainting ≥ 50
- 01C04 Females w/ fainting / near fainting 12-50
- 01C05 Males with pain above navel ≥ 35
- 01C06 Females with pain above navel ≥ 45
- 01D01 Not alert

Card 2 – Allergies (Reactions)/Envenomations (Stings/Bites)

- 02A01 No difficulty breathing or swallowing
- 02A02 Spider bite
- 02B01 Unknown status/Other codes N/A
- 02C01 Difficulty breathing or swallowing
- 02C02 History of severe allergic reaction
- 02D01 Not alert
- 02D02 Difficulty speaking between breaths
- 02D03 Swarming attack (bee, wasp, hornet)
- 02D04 Snakebite
- 02E01 Ineffective Breathing

Card 3 – Animal Bites/Attacks

- 03A01 Not Dangerous body area
- 03A02 Non-recent (≥ 6 hrs) Injuries (w/o ps)
- 03A03 Superficial bites
- 03B01 Possibly Dangerous body area
- 03B02 Serious hemorrhage
- 03B03 Unknown status/Other codes N/A
- 03D01 Unconscious or Arrest
- 03D02 Not alert
- 03D03 Chest or Neck injury (w/ diff. breath)
- 03D04 Dangerous body area
- 03D05 Large animal
- 03D06 Exotic animal
- 03D07 Attack or multiple animals

Card 4 – Assault/Sexual Assault

- 04A01 Not Dangerous body area
- 04A02 Non-recent (≥ 6 hrs) injuries (w/o ps)
- 04B01 Possibly Dangerous body area
- 04B02 Serious hemorrhage
- 04B03 Unknown status/Other codes N/A
- 04D01 Unconscious or Arrest
- 04D02 Not alert
- 04D03 Chest or Neck injury (w/ diff. breath)
- 04D04 Multiple victims

Card 5 – Back Pain (Non-Trauma or Non-Recent Trauma)

- 05A01 Non-Traumatic back pain
- 05A02 Non-rec (≥ 6 hrs) trauma back pain
- 05C01 Suspected aortic aneurysm
- 05C02 Known aortic aneurysm
- 05C03 Fainting or near fainting ≥ 50
- 05D01 Not alert

Card 6 – Breathing Problems

- 06C01 Abnormal breathing
- 06C02 Not alert
- 06D01 Difficulty Speaking Between Breaths
- 06D02 Changing Color
- 06D03 Clammy
- 06E01 Ineffective Breathing

Card 7 – Burns (Scalds)/Explosion

- 07A01 Burns < 18% body area
- 07A02 Fire alarms (unknown situation)
- 07A03 Sunburn or Minor burns (<hand size)
- 07B01 Blast injuries (w/o priority symptoms)
- 07B02 Unknown status/Other codes N/A
- 07C01 Building fire w/ persons rpted inside
- 07C02 Difficulty breathing
- 07C03 Burns ≥ 18% body area
- 07C04 Significant Facial burns
- 07D01 Multiple victims
- 07D02 Unconscious or Arrest
- 07D03 Not alert
- 07D04 Difficulty Speaking Between Breaths

Card 8 – Carbon Monoxide/Inhalation/Hazmat

- 08O01 C.O. alarm (w/o priority symptoms)
- 08B01 Alert without difficulty breathing
- 08C01 Alert with difficulty breathing
- 08D01 Unconscious or Arrest
- 08D02 Not Alert
- 08D03 Difficulty Speaking Between Breaths
- 08D04 Multiple victims
- 08D05 Unknown status/Other codes N/A

Card 9 – Cardiac or Respiratory Arrest/Death

- 09O01 Expected Death (unquestionable)
- 09B01 Obvious death (unquestionable)
- 09D01 Ineffective Breathing
- 09D02 Obvious or expected death questionable
- 09E01 Not breathing at all

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09E02 Breathing uncertain (Agonal)	14C01 Alert with abnormal breathing
09E03 Hanging	14D01 Unconscious or Arrest
09E04 Strangulation	14D02 Not alert
09E05 Suffocation	14D03 Diving or suspected neck injury
09E06 Underwater	14D04 SCUBA accident
Card 10 – Chest Pain	Card 15 – Electrocution/Lightning
10A01 Breathing normally < 35	15C01 Alert and breathing normally
10C01 Abnormal breathing	15D01 Unconscious
10C02 Heart attack or angina history	15D02 Not disconnected from power
10C03 Cocaine	15D03 Power not off or hazard present
10C04 Breathing normally ≥ 35	15D04 Extreme Fall (≥ 30 ft/10m)
10D01 Not alert	15D05 Long Fall
10D02 Difficulty Speaking Between Breaths	15D06 Not alert
10D03 Changing Color	15D07 Abnormal breathing
10D04 Clammy	15D08 Unknown status/Other codes N/A
Card 11 – Choking	15E01 Not breathing/Ineffective breathing
11A01 Not choking now (breathing normal)	Card 16 – Eye problems/Injuries
11D01 Abnormal breathing (partial obstruct)	16A01 Moderate eye injuries
11D02 Not alert	16A02 Minor eye injuries
11E01 Complete Obstruction/Ineffect breathing	16A03 Medical eye problems
Card 12 – Convulsions/Seizures	16B01 Severe eye injuries
12A01 Not seizing now/breathing effectively	16D01 Not alert
12A02 Focal seizure (alert)	Card 17 – Falls
12A03 Impending seizure (aura)	17A01 Not dangerous body area
12B01 Effective breathing not verified < 35	17A02 Non-recent (≥ 6hrs) injuries (w/o ps)
12C01 Focal seizure (NOT alert)	17A03 Public Assist (no injuries and no ps)
12C02 Pregnancy	17B01 Possibly dangerous body area
12C03 Diabetic	17B02 Serious hemorrhage
12D01 Not breathing	17B03 Unknown status/Other codes N/A
12D02 Continuous or multiple seizures	17D01 Extreme Fall (≥ 30ft/10m)
12D03 Agonal/Ineffective breathing	17D02 Unconscious or Arrest
12D04 Effective breathing not verified ≥ 35	17D03 Not alert
Card 13 – Diabetic Problems	17D04 Chest or Neck injury (w/ diff. breath)
13A01 Alert and behaving normally	17D05 Long Fall
13C01 Not alert	Card 18 – Headache
13C02 Abnormal behavior	18A01 Breathing normally
13C03 Abnormal breathing	18B01 Unknown status/Other codes N/A
13D01 Unconscious	18C01 Not alert
Card 14 – Drowning /Diving/SCUBA Accident	18C02 Abnormal breathing
14A01 Alert & breathing normally (no injuries & out of water)	18C03 Speech problems
14B01 Alert/ breathing normal (injuries/in water)	18C04 Sudden onset of severe pain
14B02 Unknown status/Other codes N/A	18C05 Numbness
	18C06 Paralysis
	18C07 Change in behavior (≤ 3hrs)

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Card 19 – Heart Problems/A.I.C.D.

- 19A01 Heart rate $\geq$ 50 bpm and < 130 bpm (without priority symptoms)
- 19A02 Chest pain < 35 (w/o ps)
- 19C01 Firing of A.I.C.D.
- 19C02 Abnormal breathing
- 19C03 Chest pain $\geq$ 35
- 19C04 Cardiac history
- 19C05 Cocaine
- 19C06 Heart rate < 50 bpm or $\geq$ 130 bpm
- 19C07 Unknown status/Other codes N/A
- 19D01 Not alert
- 19D02 Difficulty Speaking Between Breaths
- 19D03 Changing Color
- 19D04 Clammy
- 19D05 Just resuscitated &/or defibrillated

Card 20 – Heat/Cold Exposure

- 20A01 Alert
- 20B01 Change in skin color
- 20B02 Unknown status/Other codes N/A
- 20C01 Heart attack or angina history
- 20D01 Not alert
- 20D02 Multiple victims (w/ priority symptoms)

Card 21 – Hemorrhage/Lacerations

- 21A01 Not dangerous hemorrhage
- 21A02 Minor hemorrhage
- 21B01 Possibly Dangerous hemorrhage
- 21B02 Serious hemorrhage
- 21B03 Bleeding disorder
- 21B04 Blood thinners
- 21C01 Hemorrhage through TUBES
- 21C02 Hemorrhage of dialysis fistula
- 21D01 Unconscious or Arrest
- 21D02 Not alert
- 21D03 Dangerous hemorrhage
- 21D04 Abnormal breathing

Card 22 – Inaccessible Incident/Other Entrapments (Non-Vehicle)

- 22A01 No longer trapped (no injuries)
- 22B01 No longer trapped (unknown injuries)
- 22B02 Peripheral entrapment only
- 22B03 Unknown status (investigation)
- 22D01 Mechanical/Machinery Entrapment
- 22D02 Trench collapse
- 22D03 Structure collapse

- 22D04 Confined space Entrapment

- 22D05 Inaccessible terrain situation

- 22D06 Mudslide/Avalanche

Card 23 – Overdose/Poisoning (Ingestion)

- 23O01 Poisoning (w/o priority symptoms)
- 23B01 Overdose (w/o priority symptoms)
- 23C01 Not alert
- 23C02 Abnormal breathing
- 23C03 Antidepressants (tricyclic)
- 23C04 Cocaine, meth, (or derivatives)
- 23C05 Narcotics (heroin)
- 23C06 Acid or alkali (lye)
- 23C07 Unknown status/Other codes N/A
- 23C08 Poison Control request for response
- 23D01 Unconscious
- 23D02 Changing Color

Card 24 – Pregnancy/Childbirth/Miscarriage

- 24O01 Waters broken (no contractions)
- 24A01 1st trimester hemorrhage/miscarriage
- 24B01 Labor (deliv. not imminent, $\geq$ 20 wks)
- 24B02 Unknown status/Other codes N/A
- 24C01 2nd trimester hemorrhage/miscarriage
- 24C02 1st trimester serious hemorrhage
- 24C03 Baby born (no complications)
- 24D01 Breech or cord
- 24D02 Head visible/out
- 24D03 Imminent deliver ($\geq$ 5 mos/20 weeks)
- 24D04 3rd trimester hemorrhage
- 24D05 High risk complications
- 24D06 Baby born (complications w/ baby)
- 24D07 Baby born (complications w/ mother)

Card 25 – Psychiatric/Abnormal Behavior/Suicide Attempt

- 25A01 Non-suicidal and alert
- 25A02 Suicidal (not threatening) and alert
- 25B01 Serious hemorrhage
- 25B02 Non-serious or minor hemorrhage
- 25B03 Threatening suicide
- 25B04 Jumper (threatening)
- 25B05 Near hanging, strangulation, or suffocation (alert)
- 25B06 Unknown status/Other codes N/A
- 25D01 Not alert
- 25D02 Dangerous hemorrhage

	TAMU EMRC-EMS	EMD DETERMINANTS VERSION 12	
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Card 26 – Sick Person (Specific Diagnosis)
26O02-28 Non-priority complaints
26A01 No priority symptoms (complaint 2-11 not identified)
26A02-11 Non-priority complaints
26B01 Unknown status/Other codes N/A
26C01 Altered Level of Consciousness
26C02 Abnormal breathing
26C03 Sickle cell crisis/Thalassemia
26D01 Not alert

Card 27 – Stab/Gunshot/Penetrating Trauma
27A01 Non-Recent (≥6hrs) peripheral wounds
27B01 Non-Recent (≥6hrs) central wound
27B02 Known single peripheral wound
27B03 Serious hemorrhage
27B04 Unknown status/Other codes N/A
27B05 Obvious Death
27D01 Unconscious or Arrest
27D02 Not alert
27D03 Central wounds
27D04 Multiple wounds
27D05 Multiple victims

Card 28 – Stroke (CVA)
28A01 Breathing normally < 35
28B01 Unknown status/Other codes N/A
28C01 Not alert
28C02 Abnormal breathing
28C03 Speech or movement problems
28C04 Numbness, paralysis, or movement problems
28C05 Vision problems
28C06 Sudden onset of severe headache
28C07 Stroke history
28C08 Breathing normally ≥ 35

Card 29 – Traffic/Transportation Accidents
29O01 No injuries (confirmed)
29A01 1st party caller with Not Dang Injury
29B01 Injuries
29B02 Serious hemorrhage
29B03 Other hazards
29B04 Unknown status/Other codes N/A
29D01 Major incident (a through f)
29D02 High mechanism (k through s)
29D03 Hazmat
29D04 Pinned (trapped) victim

29D05 Not alert

Card 30 – Traumatic Injuries (Specific)
30A01 Not dangerous body area
30A02 Non-recent injuries (≥ 6hrs) (w/o ps)
30B01 Possibly dangerous body area
30B02 Serious hemorrhage
30D01 Unconscious or Arrest
30D02 Not alert
30D03 Chest or Neck injury (w/ diff. breathing)

Card 31 – Unconscious/Fainting (Near)
31A01 Fainting episode(s) and alert ≥ 35 (without cardiac history)
31A02 Fainting episode(s) and alert < 35 (with cardiac history)
31A03 Fainting episode(s) and alert < 35 (without cardiac history)
31C01 Alert with abnormal breathing
31C02 Fainting episode(s) and alert ≥ 35 (with cardiac history)
31C03 Females 12-50 with abdominal pain
31D01 Unconscious – Agonal/Ineffect breathing
31D02 Unconscious – Effective breathing
31D03 Not alert
31E01 Changing Color

Card 32 – Unknown Problem (Man Down)
32B01 Standing, sitting, moving, or talking
32B02 Medical Alarm notifications
32B03 Unknown status/Other codes N/A
32B04 Caller's language not understood
32D01 Life Status Questionable

Card 33 – Transfer/Interfacility/Palliative Care
33A01 Acuity I (no priority symptoms)
33A02 Acuity II (no priority symptoms)
33A03 Acuity III (no priority symptoms)
33C01 Not alert (acute change)
33C02 Abnormal breathing (acute onset)
33C03 Significant hemorrhage or shock
33C04 Possible acute heart problems or MI
33C05 Acute severe pain
33C06 Emergency response requested
33D01 Suspected cardiac or respiratory arrest
33D02 Just resuscitated &/or defibrillated

	TAMU EMRC-EMS	FILE TRANSFER OF PATIENT CARE RECORDS	
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A Patient Care Record (PCR) shall be accurately completed for each ambulance response to a 9-1-1 call for service and contain all available requested information regarding call demographics, patient assessment, care rendered and patient response to care. This also includes non-emergency responses and dedicated standbys with or without patient transport, calls where a unit has responded and there is no patient contact or response is cancelled before scene arrival and all transfers whether scheduled or non-scheduled. Completed PCR's may not be altered or changed unless done by the individual that completed the form, except to add or change billing information, or add name and other pertinent demographic information if it was unknown at the time of the call. Intentional failure to complete a PCR when required may result in disciplinary action.

Completed PCR's are confidential patient medical records and access is limited to responding personnel, State EMS authority as part of an administrative investigative process, authorized medical facilities that received the transport and ambulance provider service payer sources. Copies of completed PCR's may be provided to other sources only as legally permitted. The records may also be provided to the patient or patient responsible party by valid medical record release.

PCR completion and dispersal

1. Documentation of patient assessment and treatment information contained on PCR's is the responsibility of personnel providing patient care. All TAMU EMRC employees providing patient care are required to sign the patient care record.
2. Completed PCR's may not be altered or changed except by the individual that completed the form, except as previously noted. If a paper PCR is utilized, any documentation error shall be lined through, and the correction shall have the patient attendant's initials beside it. Any changes made to an automated PCR shall have documentation of those changes retained in the computer database and correction logbook.
3. Each PCR shall be accurately completed with all available and relevant information as described in the documentation standards for TAMU EMRC-EMS. Use of usual and customary abbreviations is permitted in the narrative section of the record or as defined in automated PCR predesignated picklists.
4. Each PCR shall be accurately completed as soon as possible after the response or patient transport is completed and copies should be provided to the receiving facility in the customary manner. If the transport personnel are unable to complete the form prior to leaving the facility, the PCR shall be completed and returned to the receiving facility as soon as possible, but in no case later than 24 hours after completion of the call. If extenuating circumstances prevent this from taking place, the Clinical Department should be notified so that copies of the PCR may be forwarded to the facility.
5. Wait and return transfers receive two (2) incident numbers (one incident number to transport the patient to destination and the second to return to originating location). Therefore, two (2) reports should be written.
6. File transfers of PCR's **SHOULD** take place daily. This transfer should occur regardless of any open calls. Crews are encouraged to complete PCR's as soon as possible after the incident occurs.

	TAMU EMRC-EMS	FILE TRANSFER OF PATIENT CARE RECORDS	
	Standard Delegated Orders – Clinical Guidelines	CG 33	Page 71
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7. Employees with open calls transferred should report to the Clinical Department within 48 hours to complete the PCR. Failure to complete the PCR within this time may result in Clinical Suspension of authorization and the employee should not be pain to complete the report.
8. Employees with reasonable explanations for not completing the PCR may be exempt from Clinical Suspension. Each incident will be reviewed and exemption determined on an individual basis by incident.

Daily transfer of the patient care record is important from a Clinical as well as a billing aspect. Therefore, in an effort to improve this, procedural guidelines have been developed for file transfers to occur.

Units that are on station at shift change should still attempt file transfer before 0700 hrs. Units that are responding to emergency calls should have until 0900 hrs. to complete this procedure. **Peak trucks should file transfer before they sign out and go home.**

File transfers are to occur daily regardless of any open calls. *If the on-coming crew notices calls from the previous shift they SHOULD perform a file transfer as soon as they are able.* If you are unable to complete the file transfer, please notify someone in the Clinical Department. This ensures that the Electronic Patient Care Record System server is working properly or has been reset. Remember you can file transfer as many times per shift as you choose or have time.

Patient Care Records that are transferred without being closed **SHOULD** be completed within **two (2) business days or 48 hours** after the response. It is the **responsibility of the employee** to schedule time to complete the record. Any employees with open calls after two (2) business days or 48 hours will be placed on Clinical suspension and **WILL NOT** be allowed to return to work until all reports are completed.

When an employee has received two (2) Clinical Suspensions for open calls the third step in the disciplinary process will be one (1) shift off without pay. The employee MAY NOT be allowed to use PTO time or work an extra shift during the same week that he/she is suspended without pay. Once the fourth incident occurs the employee may be reported to the Texas Department of Health for violations of the Texas Administrative Code Rule 157.36 (b), (1), (2), (3) and (28) and may be subject to a non-emergency suspension, decertification and revocation of their certification or licensure (see attached TDS rules).

We understand there will be circumstances when employees may not be able to meet the 2-business day and/or 48-hour deadline. **Each incident will be reviewed on a case by case basis.** It is the responsibility of the employee to contact their Supervisor or the Clinical Department before the deadline occurs to make appropriate arrangements to complete the documentation process. The Clinical department should document that the employee called as well as the reason for non-compliance with the deadline time. An appointment should be made with the employee to complete the report as soon as possible. Documentation of this interaction will be placed in the employee file. Failure to contact the Clinical department to initiate this process will result in Clinical suspension until the patient care records are completed.

	TAMU EMRC-EMS	FILE TRANSFER OF PATIENT CARE RECORDS	
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It is a **requirement** of all operation's employees to **complete** reports in a timely manner **during normal shift hours**. **Overtime will not be paid** to complete open calls unless late calls, posting assignments, or Electronic Patient Care Record System failure prohibits the procedure. Again, each incident will be considered on a case by case basis. If overtime pay is appropriate for the situation, the EMS Manager may approve the employees' time to complete the report. The employee **SHOULD NOT** be pain for time spent writing a report beyond his/her normally scheduled shift **UNLESS** there is written documentation from a Supervisor that authorizes the overtime.

	TAMU EMRC-EMS	ALLIED HEALTH CARE PROVIDERS	
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The purpose of this policy is to ensure compliance with the rules of the Texas State Board of Medical Examiners, the Texas State Board of Nurse Examiners, and the Texas Department of State Health Services. In accordance with these rules, Allied Health Care providers may accompany EMS personnel during the ambulance transport of a patient for the purposes of:

1. Providing additional personnel to allow the efficient and effective provision of care to critically ill or injured patients.
2. Monitoring and managing equipment, adjuncts, and medications with which the EMS personnel are not familiar (e.g.; IV pumps, ventilators, or unusual IV medications).

For the purpose of this policy, Allied Health Care providers are defined as:

1. Nursing personnel (LVNs, GN's, and RN's)
2. Respiratory Therapists or Respiratory Care Practitioners
3. Nurse Practitioners, Physician Assistants

Allied Health Care providers are authorized to accompany ambulances in the TAMU EMRC System when they are requested by the attending EMS personnel, the transferring physician, or the on-line medical control personnel.

The attending Paramedic is ultimately responsible for the management of the patient while in the care of the EMS system. Allied Health Care providers may not independently treat patients while those patients are in the care of the EMS system.

Either the protocols or the on-line physician must authorize all treatments and therapies. Orders from the transferring physician concerning care to be rendered during transport that is not in the current protocols must be given as written orders and turned in with the patient care report.

When a transferring physician requires specialized drugs or narcotics that are not in the TAMU EMRC stock, the physician shall provide the EMS personnel with the drugs/narcotics needed. The drugs/narcotics must be accompanied with a written order from the transferring physician. Drugs/narcotics not used will be wasted as the Controlled Substance Policy.

The presence of Allied Health Care providers does not exempt the EMS unit from proper staffing requirements set forth by TDSHS Rule § 157.11 or proper paperwork.

	TAMU EMRC-EMS	PRIMARY SURVEY/CABC'S	
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Throughout the Protocols, the acronym “CABC's” is used to indicate the primary survey of every patient. Our patient survey consists of the evaluation and, if needed, management of the following components:

- Cervical spine
- Level of consciousness
- Airway
- Breathing
- Circulation

The following is an outline for the assessment and management of these components.

The patient survey includes (in order):

1. Obtain manual control of cervical spine, if indicated.
2. Quickly establish level of consciousness (AVPU).
3. Evaluate airway. Establish patent airway if needed.
4. Evaluate breathing. Initiate ventilation or ventilatory assistance if needed. Assess for open chest wounds. Occlude any found.
5. Check for presence and adequacy of circulation. Initiate chest compressions if needed. Check for external bleeding. Control any significant bleeding found.

Cervical Spine

If there is any possibility of a spinal injury through mechanism of injury or level of medic's suspicion, the provider should assume that one exists and approach the patient accordingly. Once permission to assess the patient is obtained, by verbal consent, the provider's next step on any patient with the possibility of spinal injury is to manually obtain control of the c-spine. This manual c-spine stabilization should be maintained until:

1. Further assessment clearly and absolutely rules out any possibility of spinal injury,
2. The spine is adequately immobilized with adjuncts which relieve the need for manual stabilization OR
3. The patient refuses further treatment or transport.

According to BTLS, the following are indicators from the mechanism of injury that a potential spinal injury exists and that these patients should be immobilized:

- Blunt trauma above the clavicles
- Diving accident
- Motor vehicle collision or bicycle accident
- Fall
- Stabbing or impalement anywhere near the spinal column
- Shooting or blast injury to the torso
- Any violent injury with forces that could act on the spinal column or cord

Patients who are found unconscious on the floor are considered to have a cervical spinal injury unless a bystander or family member can give an accurate account of how the patient got to the floor. Proper cervical spine protection includes manual stabilization, C-collar application, patient placement, via logroll, onto long back board, webbing application and head bed/towel roll/head block application.

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Placing a patient in a Scoop Stretcher does not constitute spinal motion restriction. If the patient is placed in a Scoop Stretcher, then spinal immobilization can be accomplished as follows: manual stabilization, C-collar application, Scoop stretcher application, placement of patient and Scoop stretcher onto back board, webbing application, and head bed/towel roll/head block application.

Level of Consciousness

The level of consciousness should be briefly assessed next, to determine only the patient's rating on the "AVPU" scale (**A**lert, responsive to **V**oice, responsive to **P**ain, **U**nresponsive). Further assessment of the level of consciousness is to be deferred until the secondary survey.

Airway

The patient's airway should next be evaluated for patency. If there is any indication of a compromise in the patient's airway or any threat that such a compromise will develop, the provider should immediately intervene to secure the airway. Indications of compromise may be as overt as apnea or a visible obstruction, or may be indicated by a less obvious sign such as airway noises (stridor, snoring, gurgling, etc.)

The airway should be secured first with positioning, using a jaw-thrust if spinal injury cannot be ruled out or a head-tilt/chin-lift if spinal injury is not a concern. If material should be physically removed from the airway, this should be done next using abdominal or chest thrusts, a finger sweep, and/or oral suctioning as appropriate. If the patient's level of consciousness is diminished, an airway adjunct should be placed next. Use an oral airway if the patient will tolerate it, otherwise use a nasal trumpet. Manual positioning **should** be maintained concurrently with the use of such an adjunct. If possible, the airway should next be definitively secured with ET intubation. Even in the patient whose airway is initially patent, the provider should continuously reassess and be prepared to intervene against any airway compromise.

Breathing

The next component to be assessed is the patient's respiratory status. If the patient is not breathing spontaneously, ventilation with supplemental oxygen should be initiated immediately. If the patient is breathing spontaneously, the adequacy of the patient's respiratory effort should be evaluated. If the patient's rate or tidal volume is inadequate, assisted ventilation with supplemental oxygen is to be provided immediately. The patient's chest should also be rapidly assessed for open wounds which would compromise respiration. If any open chest wound is found, it should be immediately occluded, initially with the provider's gloved hand and then with an occlusive dressing.

The bag-valve-mask device with oxygen at 10-15 liters per minute and a reservoir bag is the preferred method of providing ventilation. The demand-valve (oxygen-driven, manually triggered device) should not be used unless a properly functioning BVM is not available as the demand-valve offers no sense of compliance or resistance to the operator and often results in excessive gastric distention. If possible, the airway should always be secured with ET intubation if positive pressure ventilation is to be instituted. As with the airway, the provider should continuously reassess the ventilatory status of even the most stable patient and be prepared to rapidly intervene if respiratory compromise develops.

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Circulation

The patient shall next be assessed for:

1. Adequate circulation **AND**
2. For the presence of major external hemorrhage.

If the patient is awake or at least responsive to verbal or physical stimulus, the provider shall assume that circulation is adequate for the moment and move on. If the patient is unresponsive, the provider should assess for the presence and adequacy of a palpable carotid pulse. If the patient does not have a palpable carotid pulse, or has a pulse of less than 30/min in the adult (less than 40/min in a child or less than 60/min in an infant), the provider should initiate chest compressions. A more accurate evaluation of the patient's perfusion status should be done during the secondary survey. Next, rapidly assess the patient for external bleeding. If major bleeding is found, it should be immediately controlled with direct pressure.

	TAMU EMRC-EMS	FOCUSED AND DETAILED EXAM	
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FOCUSED AND DETAILED EXAMINATIONS

The focused exam is an assessment that is pertinent to the patient's chief complaint. The detailed physical exam is a systematic, whole body assessment that evaluated physical findings and significant history. It is performed after the initial assessment has determined that there is no life threat, or interventions have been made to lessen that threat. The amount of time expended or even the necessity of these exams is directly dependent on the patient's condition. All remarkable findings, associated symptoms, and pertinent negatives (ASPN) are to be documented.

This is also the time that an interview is conducted for history. This information is to be included in the patient report to the health care provider who receives this patient as well as in the patient care report. The SAMPLE mnemonic is easily remembered as:

S – Signs/symptoms
A – Allergies
M – Medications (prescribed, over the counter, or elicit)
P – Pertinent past medical history
L – Last oral intake
E – Event that lead up to calling EMS

O – Onset of symptoms	A – Associated
P – Provocation	S – Symptoms
Q – Quality of pain	P – Pertinent
R – Radiation of pain	N – Negatives
S – Severity	
T – Time	

TRAUMA SURVEY

A helpful mnemonic to assess trauma patients comes from the Basic Trauma Life Support class. Head, Neck, Chest, Abdomen, and Extremities can be systematically checked using DCAP-BTLS, or if you prefer, DCAP-BLSTIC.

D – Deformity	B – Burns
C – Contusions	L – Lacerations
A – Abrasions	S – Stability
P – Penetrations or Paradoxical Movement	T – Tenderness
	I – Instability
	C – Crepitus

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TRAUMA HEAD-TO-TOE SURVEY

Head, Face, Eyes

- Deformities
- Depressions
- Contusions
- Hematomas/Battle's Signs
- Lacerations
- Pupil size, equality, reaction to light
- Extraocular motions
- Raccoon's eyes
- Blink Reflex
- Foreign Bodies
- Penetrations
- Burns
- Facial Symmetry
- Fractures
- Discharge from ears, nose
- Loose teeth, Dentures
- Oral Secretions, vomitus or bleeding
- Contact or Glasses

Neck

- Point tenderness
- Alignment
- Neck Veins: Flat or Distended
- Trachea: Midline or Deviated

Chest

- Paradoxical Motion
- Breath/Heart Sounds
- Sternal Inspection
- Crepitus
- Retractions with Respirations
- Contusions, Abrasions, Hematomas
- Sucking Chest Wound Phenomenon

Abdomen

- Localized Tenderness
- Rebound Pain/Referred Pain
- Pulsatile Mass
- Distention
- Rigidity
- Bowel Sounds
- Ecchymosis

Pelvis

- Deformities
- Pain on Palpation
- Contusions, Abrasions, Hematomas
- Ecchymosis
- Genitalia Trauma

Extremities

- Distal Circulation
- Range of Motion
- Motor/Sensory Response
- Abnormalities/Deformities
- Contusions, Abrasions, Hematomas
- Skin Color/Turgor

Back

- Pain
- Deformities
- Contusion, Abrasions

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MEDICAL/CARDIAC HEAD-TO-TOE SURVEY

Head, Face, Eyes

- Pupil Size, Equality, Reaction to Light
- Extraocular Motions
- Conjunctiva Color
- Blink Reflex
- Contacts or Glasses
- Facial Symmetry
- Skin Color and Quality
- Discharge from Ears, Nose
- Mouth Odors
- Loose Teeth, Dentures
- Mucous Membrane Color

Neck

- Carotid Artery Bruits
- Neck Veins: Flat or Distended
- Trachea: Midline or Deviated
- Nuchal Rigidity

Chest

- Paradoxical Motion
- Breath/Heart Sounds
- Retractions with Respirations

Abdomen

- Localized Tenderness
- Rebound Pain/Referred Pain
- Pulsatile Mass
- Distention
- Rigidity
- Bowel Sounds
- Ecchymosis

Extremities

- Distal Circulation
- Range of Motion
- Motor/Sensory Response
- Abnormalities/Deformities
- Skin Color/Turgor
- Cyanosis, Clubbing Edema

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Occasionally, EMS personnel will encounter a patient whose injury can only be treated definitively with surgery. When confronted with such a patient, the attending EMS personnel shall institute the basic interventions noted here and begin transport to an appropriate facility **AS SOON AS POSSIBLE**.

Rapid transport includes utilizing the helicopter to transport the patient, when doing so expedites the transport of the patient to the most appropriate facility. See the “Air Medical Utilization” protocol for specific guidelines regarding this issue.

ONLY THE FOLLOWING INTERVENTIONS ARE TO BE DONE PRIOR TO INITIATING TRANSPORT:

- Spinal Motion Restriction
Spinal Motion Restriction procedures may need to be modified and abbreviated to achieve rapid transport in some situations. Such deviations should be well documented and should still ensure that the patient is adequately and appropriately secured and immobilized. The KED should not be used to immobilize sitting patients in a rapid transport situation.
- BLS airway and ventilation procedures (Oxygen administration, OPA, BVM, etc.)
- Defibrillation (only the initial shock)
- Intubation **IF** it can be accomplished rapidly (two attempts)
- Surgical airway
- Occlusion of open chest wounds
- Vital signs (may use peripheral pulses to estimate—See “Diagnostic Tools and Procedures” rationale)
- Freeing patient from entrapment

All other interventions are to be done once enroute to the hospital. IF entrapment delays transport, other interventions may be instituted on-scene while awaiting the patient to be freed (e.g., bandaging/splinting, IV initiation, cardiac monitoring, etc.).

The following represent patients for whom rapid transport is suggested:

- Patients meeting the BTLS guidelines for “load and go situation”
- Adult and Pediatric Critical Trauma as defined in “Destination Determination” protocol
- Head Injury or CVA with evidence of increasing ICP
- Suspected aortic aneurysm
- Suspected ectopic pregnancy, abruptio placenta, or uterine rupture
- All abdominal pain patients with unstable vital signs (tachycardia with normotension, hypotension)
- Obstetrical emergencies resulting in possible fetal distress, such as limb presentation, breech delivery, or prolapsed cord
- GI bleeding with unstable vital signs (tachycardia with normotension or hypotension)
- Any other patient requiring urgent surgical intervention

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STANDARDS FOR DOCUMENTATION

All providers shall have the responsibility for ensuring that all EMS incidents to which a unit is dispatched are documented. This includes all incidents in which a patient is treated and/or transported by the responding unit; the patient refuses any aspect of EMS service; the patient has left the scene; unfounded calls; the patient is referred to another unit or service for transport; and people on scene meeting the definition of “no patient.” The provider shall have the responsibility for ensuring that a patient care report is prepared. The patient care report should include signatures where appropriate. EKG data should be uploaded and linked to the PCR.

Key:

Bold items indicate an “Absolute” and should be documented

Italicized items indicate examples of terminology that may be used to document that component

For all required components and criteria that cannot be obtained, place NA for Not Applicable or “0” (zero) for number fields.

Operations Information Component

Standard: Completion of this documentation shall require proper documentation of all absolute criteria listed as follows:

Location of incident, including street address and city

Unit designation of dispatched unit

Complete and Correct **Incident number** as assigned by Communications

Crewmembers assigned to call, identified by employee number and signature

Destination

If delivered to a hospital other than the ED, document area of hospital (Rm. #, ICU, L&D)

Dispatch priority

Dispatch Determinant

Transport Priority

Mileage

Appropriate Signatures

Goal: Proper documentation of 100% of the above criteria

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Acceptable Terminology:

Destination (where patient was delivered)

If a patient was not transported, the Call Outcome should include the reason. *Refusal; Dead on scene; No Injury; etc.*

If the chart is generated by a non-transporting unit, the Call Outcome section should include the patient's disposition. *Refusal; Dead on scene; transported by (transporting unit's service name and designation), etc.*

If the patient is delivered to the Emergency Department, the Call Outcome section should include the name of the facility. *College Station Medical Center; St. Joseph's Regional Health Center; Beutel Health Center; etc.*

If the patient is delivered to a facility/location other than the Emergency Department, the Call Outcome section should include the name of the facility/location. *CSMC Labor and Delivery; AMP Landing Zone; etc.*

Dispatch Priority

Shall be documented in the Response Screen as how the crew responded to the call.

Emergency = Priority 1 or 2
Non-Emergency = Priority 3 or 4
Other = Walk In Patient

Dispatch Determinant

Shall be documented in the Response Screen as received by the crew from Communications in the format of Dr. Jeff Clawson EMD guidelines.

Transport Priority

Shall be documented in the Call Outcome as follows:

Transport Status (*Priority 1, Priority 3*)

Mileage

Shall be documented with beginning and ending transport mileage with total miles including decimal points from scene to destination.

Appropriate Signatures

Shall be obtained for Refusals, Refusal of Treatment, No Injuries, etc. If patient cannot sign, document why patient is unable to sign.

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Patient Demographics Component

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all absolute criteria.

Patient name

Patient age

Date of Birth

Patient’s sex

Name of Guardian/Next of Kin

(If applicable for minors and geriatric)

Mailing address, City, State, Zip Code

Home Telephone Number

Social Security Number

“Bill To” Information

Medicare/Medicaid Number (If applicable)

Insurance Company Name (If applicable)

Insurance policy/group number (If applicable)

Insurance Phone Number (If applicable)

Goal: Proper documentation of 100% of the above criteria

Acceptable Terminology:

If information is unobtainable, place “0” (zeros) in number fields.

If patient has no address, use “NFA” for no fixed address.

All minors should have Next of Kin/Guardian documented.

Primary Survey

Standard: An evaluation of “satisfactory” completion of this documentation component shall require the documentation of all of the absolute criteria and at least 50% of the remaining criteria. The criteria are as follows:

The Primary Assessment should be overly stated as:

Documentation as to the absence, possibility, or presence of an injury to the patient’s spine. If an injury to the cervical spine is observed or suspected, you should state when/how you maintained the C-spine manually.

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Documentation concerning the patency of the patient's airway.

Documentation concerning the presence or absence and the quality of the patient's breathing.

Documentation concerning the presence or absence of a palpable pulse. If the patient has palpable pulse, the provider should document at which site the pulse was palpated.

Documentation as to the presence or absence of visible external bleeding. If external bleeding is present, the provider should document (in general terms) the rate and quantity of bleeding.

Documentation of patient's mental status using the "AVPU" scale. The provider shall document the highest score on this scale.

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

Airway

If the patient's airway is not intact, state the factors which are contributing to the compromise.

Breathing

In describing the quality of the patient's respirations, the following terms are acceptable:

Uncomplicated, non-labored, labored, snoring, agonal, wheezing, tachypnic, shallow, Kussmaul, Cheynne-Stokes, gasping, and absent.

Circulation

When documenting the presence of a pulse, the following terms may be used:

Faint, weak, thready, rapid, regular, irregular, bounding, slow, bradycardic, tachycardic, and strong

Bleeding

When documenting the presence and extent of external bleeding, first state whether the bleeding is venous or arterial. Then describe the quantity/quality of the bleeding.

Stopped PTA: bleeding that ceased prior to the arrival of EMS units either by self-clotting or other interventions.

Minimal: slow capillary bleeding easily stopped by direct pressure

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Moderate: venous or arterial bleeding that is controlled with firm direct pressure and bulky dressing.

Severe: venous or arterial bleeding that cannot be controlled by firm direct pressure, bulky dressing, or utilization of pressure points.

Other terms that may be used include:

Spurting, bright red, dark red, seeping, oozing, and steady.

Chief Complaint

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all of the absolute criteria.

The chief complaint should be “what the patient states” in response to the provider’s inquiry. It should not be the provider’s assessment of what is wrong. If the patient is unable to verbalize or does not answer the provider’s questions, then there is no “chief complaint.” This is to be documented as “patient unable to give chief complaint.”

Goal: Proper documentation of the patient’s chief complaint as stated by the patient and not the provider’s assessment.

Vital Signs

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all the absolute criteria and at least 50% of the remaining criteria. Criteria for the component are as follows:

Blood pressure

Pulse rate

Respiratory Rate

If the pulse is regular or irregular

The vital signs appropriately obtained

Goal: Proper documentation of 100% of above criteria.

Vital signs are defined as blood pressure (auscultated if possible with both systolic and diastolic), capillary refill (in the pediatric patient less than one year of age), pulse or heart rate, and respiratory rate.

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Repeat sets of vital signs should be obtained **every 5 minutes** in the critical, or non-stable patient, or **every fifteen minutes** or less in the stable, non-critical patient.

Capillary refill (CR) may be used as an adjunct to blood pressure in assessing/describing the perfusion status of the pediatric patient. CR is to be charted in terms of seconds (*i.e.*, CR < 2 sec.).

A palpated B/P is acceptable documentation ONLY:

- A. As an additional vital sign in the non-urgent patient in whom an auscultated B/P has already been obtained and was within accepted normal limits.
- B. In the critical trauma patient in whom serial palpated blood pressures are being obtained.
- C. In the patient in whom an auscultated blood pressure **ABSOLUTELY** cannot be obtained. In this case, the chart **SHOULD** reflect the fact that an auscultated blood pressure was unobtainable and the reason why.

Patients refusing treatment/transport should have one complete set of vital signs documented. If the vital signs are not within accepted normal limits, a second set should be documented, a minimum of five minutes after the first set. If patient refuses vital signs, document as such in your narrative.

Patients being transported from a medical facility to their home or a nursing home should have at least one set of vital signs documented. If the initial set of vital signs is not within accepted normal limits, a second set should be obtained.

Patients transported from one hospital to another or from a nursing home or other facility to a hospital should have a minimum of two sets of vital signs documented.

All other transported patients should have a minimum of two sets of vital signs documented.

The chart should reflect the reason(s) for any deviation from the standards required by the protocol for obtaining vital signs (*i.e.* patient refusing v/s, extremely short transport time, etc.).

Secondary Assessment

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all of the absolute criteria and 50% of the remaining criteria. The criteria for this component are as follows:

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Level of consciousness

Any findings relating directly to the patient's chief complaint and/or EMS differential. This may include the Medical Assessment Screens (i.e. Respiratory, Fibrinolytic, 12-Lead, Cardiac Arrest, etc.)

The presence or absence of associated findings relating indirectly to the patient's chief complaint and/or EMS differential (i.e. injuries commonly found with a particular mechanism of injury, symptoms commonly associated with a particular illness, etc.)

A complete "Head-to-toe" exam shall be performed on all trauma patients to rule out the possibility of associated injuries secondary to the mechanism.

A focused exam shall be performed on all medical patients to reveal physical findings associated with the patient's medical disease/illness.

Breath sounds (when applicable)
 Distal pulses
 Neuro sensation
 Range of motion of extremities
 Skin assessment
 Pupillary Response

Goal: Proper documentation of 100% of above criteria.

Acceptable terminology/parameters:

The patient's level of consciousness should be documented on all patient contacts, including patient refusals. Full orientation refers to the patient that is oriented *to person, place, time and event*.

Acceptable terms include:

Alert and Oriented to PPTE (Person, Place, Time and Event) or X4 (if all four)

Awake and Oriented to _____ only

Obtunded

Decreased level of consciousness AND arousable to (voice, physical stimulus, pain) *only* (should chart response to stimulus)

Unresponsive

A complete "Head-to-Toe" exam should include the exam and evaluation of the patient's **head, chest, back, abdomen, and extremities** for injury and/or abnormalities.

Assessment of the patient's skin should be charted on all assessed patients, and includes the evaluation and documentation of the patient's skin temperature, moisture, color and turgor.

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Temperature may be described as *warm, cool, etc.*
Moisture may be described as *dry, diaphoretic, etc.*
Color may be described either by *color* (i.e. *pink*) or by *quality of color* (i.e. *fair, pale, etc.*)
Turgor may be described as *fair, good, etc.* or by describing the degree of skin tenting (*right forearm skin tented for 3 seconds*).

Breath sounds should be auscultated in all patients with the possibility of respiratory compromise, either for medical or traumatic reasons. Because prehospital differentiation of rales versus rhonchi is difficult, breath sounds should be described as how they sound, such as: *wet, coarse, diminished, absent, wheezing, etc.*

Distal pulses refer to the presence or absence of radial and/or pedal pulses distal to any injury. The distal pulse should be evaluated prior to, and immediately following the immobilization and/or bandaging of an injury.

An evaluation of neurological sensation should be obtained secondary to any injury to check for deficits.

Range of Motion (ROM) should be evaluated secondary to an injury or CVA. ROM can be described as *“full,” “normal,” “decreased,” “absent,” etc.*

“Not Assessed” should be documented in all areas of the patient exam whenever the exam was not performed.

Mechanism of Injury

Standard: An evaluation of “satisfactory” completion of this documentation component shall require the proper documentation of all the absolute criteria.

For MVC's:

Damage to the windshield, steering wheel, dash, or other appropriate component of the interior

Direction and nature of impact Location and extent of exterior damage (using the Vehicle Damage Rating Scale)

Use of, and type of restraint (i.e. seatbelt, airbag)

For other injuries:

Clear description of mechanism such as the device or weapon, length of knife or implement, speed or force, height of fall, etc.

For all injuries:

Any patient statement as to **loss of consciousness** or other details of mechanism (i.e. *patient states he did not strike the steering wheel.*)

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Goal: Proper documentation of 100% of the above criteria.

History of Present Injury/Illness

Standard: An evaluation of “satisfactory” completion of this documentation component shall require the proper documentation of all the absolute criteria and at least 50% of the remaining criteria. The criteria for this component are as follows:

Onset of the event or signs/symptoms?
 What precipitated the events/symptoms?
 How have the symptoms progressed or changed?
 What aggravates or alleviates the problem?
 Any Third party information (e.g. the transferring clinic's c/c, witness statements, etc.)

Goal: Proper documentation of 100% of the above criteria.

Previous Medical History (PMHX)

Standard: An evaluation of “satisfactory” completion of this documentation component shall require the proper documentation of all the absolute criteria. The criteria for this component are as follows:

Any previous medical history stated by the patient, family, care givers, etc. or that is documented on the patient's chart or medical record.

Any recent past major surgeries

Patient's private physician (if they have one)

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

*N/A is NOT an appropriate statement, as the previous medical history is applicable to all patients.

If the patient has no pertinent previous medical history, document as “none.”

If the patient PMHX is unknown, document as “unknown.”

Home Medications/Allergies

Standard: An evaluation of “satisfactory” completion of this documentation component shall require the proper documentation of all the absolute criteria is as follows:

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**Should include all of the patient's prescription medications.
Should include all of the patient's known allergies to medications**

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

*N/A is NOT an appropriate statement as medications and allergies are applicable to all patients.

If the patient does not take any medications, document as *none*.

Med List with patient is not an acceptable notation of the patient's medications

If the patient does not know the name of a medication, document why the medication is taken. (e.g. *unknown anti-HTN medication*)

If the medication information is not available, document as *unknown*. The chart should reflect the reason you were not able to obtain the medication information.

*Over the Counter medications taken PRN, unless pertinent to the present episode, are not required to be noted (e.g. *Advil, Sudafed, etc.*)

If the patient has no allergies to medications, document as *none*, *NKDA*, or *NDA*.]

If the patient's drug allergies are unknown, document as *unknown*. The chart should reflect the reason you were not able to obtain the medication allergy information.

Other Diagnostics

Standard: An evaluation of "satisfactory completion of this documentation component shall require proper documentation of all of the absolute criteria. Criteria for this component are as follows:

Blood glucose levels should be obtained in accordance with the standards set by protocol and charted as the numeric value and the units, which are mg/dl.

Temperature should be obtained/charted on all patients as required per protocol.

A **Pulse Oximetry** reading should be obtained/charted on all patients presenting with a respiratory complaint, chest pain, or any other presentation of decreased perfusion.

Goal: Proper documentation of 100% of the above criteria.

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Acceptable Terminology:

Blood glucose levels should be obtained on all patients who experience a seizure prior to arrival of EMS or while in EMS care, have diabetic complications, altered mental status, or any other conditions where glucose monitoring is necessary.

Blood Glucose levels are to be documented as the numerical value and the proper units (mg/dl). If Blood Glucose is NOT obtained using an electronic glucometer, state that the value is estimated.

Temperature should be documented in degrees Fahrenheit. The method by which the temperature was obtained should be documented. (*Oral, Tympanic, Rectal, or Temporal*).

Pulse Oximetry readings should be noted as a percentage, and if the reading was obtained while the patient was on room air or on oxygen. (If on oxygen, state the device and liter flow).

Airway/Ventilation Management

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all of the absolute criteria.

Criteria for this component are as follows:

The chart should reflect all airway interventions performed, if any.

The chart should reflect the field personnel who performed each intervention.

The number of attempts at obtaining each type of airway.

Confirmation of breath sounds by auscultation.

If manual airway, **note method used** (e.g. jaw thrust, etc.)

If airway is used, **note size of airway.**

If intubation, document all in the intubation screens.

If suctioning, **document type of suction, type/size of catheter.**

Goal: Proper documentation of 100% of above criteria.

Acceptable Terminology:

When documenting breath sounds, document what the Breath sounds sound like if unable to differentiate between Rales and Rhonchi. (e.g. *wet, course, gurgling, wheezes, etc.*)

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EKG/Electrical Therapy

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all the absolute criteria. Criteria for this component are as follows:

The EKG should be documented for all patients on whom it is obtained.

The chart should reflect the interpretation of the initial rhythm, and all subsequent rhythm changes.

A rhythm strip should be submitted to the Clinical Department with Incident number on the strip. (If Zoll Case file not uploaded to electronic PCR)

If Cardioversion or Defibrillation is used, the following information should be noted:

Electrical Power Setting

If cardioversion is synchronized or non-synchronized.

Field personnel performing cardioversion

If Transcutaneous Pacing (TCP) is used, the following information should be noted:

Pacing rate

Milliamps used

Presence/absence of electrical capture

Presence/absence of mechanical capture

Field personnel applying TCP

If multi lead EKG is used, the following information should be noted:

Leads used (i.e. MCL1)

Interpretation of rhythm

Field personnel performing multi-lead EKG

If 12-Lead EKG is used, the following information should be noted:

Interpretation of the 12-Lead EKG

Field personnel performing 12-Lead EKG

Goal: Proper documentation of 100% of the above criteria.

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Acceptable Terminology:

When Pacing, state if the Pacer is set to fixed or demand. Electrical power settings should be in units of joules or Watts/sec. Non-synchronized cardioversion may be referred to as Defibrillation.

If obtaining a 12-Lead EKG, it should be noted that the Interpretation of the 12-Lead is either that of the machine's algorithm or the field personnel.

If the interpretation is that of the attendant, document the leads the specific findings were found (e.g. *Possible Anterior wall MI with ST segment elevation in Leads V3 and V4.*)

Oxygenation

Standard: An evaluation of "satisfactory" completion of this documentation component shall require proper documentation of all of the absolute criteria. Criteria for this component are as follows:

The chart should reflect all oxygen administration to the patient, including:

Delivery device

Liter flow

Any changes in oxygen therapy

Indication

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

Devices may be described as: *NRB, NC, Tracheal Tube, Capno Mask, etc.*

Units should be expressed in *Imp.*

Spinal Immobilization

Standard: An evaluation of "satisfactory" completion of this documentation component shall require proper documentation of all of the absolute criteria.

Criteria for this component are as follows:

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The chart should reflect any and all spinal restriction procedures.

Goal: The proper documentation of 100% of the above criteria.

Acceptable Terminology:

Full Spinal Motion Restriction is defined as including a cervical collar, long board (or equivalent device), a system for strapping the patient to the long board, and some form of head immobilization.

CC=Cervical Collar

BB=Backboard

KED=Kendrick Extrication Device

CID=Cervical Immobilization Device

HID=Head Immobilization Device

BLS Therapy

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all of the absolute criteria. Criteria for this component are as follows:

Control of bleeding (if present)

Type/location of splint/bandage applied

Presence or absence of distal pulse prior to and following the application of a bandage or splint

CPR performed (if applicable)

External cooling/warming as required per protocol

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

Control of bleeding may be described by direct pressure, pressure points, or elevation.

The **type of bandage** may be documented as *pressure, occlusive, sterile, etc.*

The type of splint needs to be described in the chart (e.g. *traction splint applied to left lower extremity*)

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The time CPR was started, as well as who performed CPR, needs to be stated in the chart. Document any pauses for interruptions, delays, etc.

External cooling includes the removal of excess clothing, application of cool, wet compress, chemical cold packs, ice packs, etc.

External warming refers to the removal of wet clothing, use of blankets, chemical heat packs, etc.

IV Therapy

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all of the absolute criteria. Criteria for this component are as follows:

- IV site
- Size of IV catheter
- Number of attempts
- IV fluid
- Drip rate
- Personnel who started the IV line

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

The IV site may be described as left hand, left AC, right wrist, etc.

IV fluid may be abbreviated as follows:

Normal Saline: *NS, NaCl, 0.9%NS*

Drip rate may be abbreviated as follows: *TKO, KVO,*

W/O (wide open), _____cc/hr.

Medication Administered

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all of the absolute criteria. Criteria for this component are as follows:

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Name of medications being administered

Amount of medication administered

Route medication administered

Field personnel administering the medication

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

Medications may be documented as trade or generic names. Amount given should be in mg, g, etc. and NOT in cc or ml. Route given may be abbreviated as IV, IO, PO, SL, SQ, IM, PR. Each medication and its subsequent dose should be charted separately. (e.g. The third dose of Epi 1:1,000 in CPR would be a separate entry).

Other ALS Therapy

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all of the absolute criteria. Criteria for this component are as follows:

Procedure or intervention performed

Number of attempts at the procedure or intervention

Field personnel performing the procedure or intervention

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

Other ALS Therapy includes Surgical Airway, Chest Decompression, Nasogastric tubes, and Vagal Maneuvers.

Interventions performed prior to EMS arrival should be documented as such in the intervention screen. Additional comments in narrative indicating procedure was continued or monitored enroute.

Time Intervals

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all of the absolute criteria. Criteria for this component are as follows:

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Time call received by Dispatch

Time call was dispatched

Time unit responded

Time unit arrived on scene

Time of patient contact

Time of arrival of transporting unit (if unit generating the chart is not transporting the patients in the case of First Responders, when helicopter ambulances are utilized, etc.)

Time unit cleared from the scene (if not transporting the patient)

Time enroute to the receiving facility

Time unit arrived at receiving facility

Time available for another call

Times are to be documented with every set of vital signs

Times are to be documented with all medications administered

Times are to be documented with all procedures performed

Acceptable Terminology:

Procedures include EKG, Cardioversion, Defibrillation, Transcutaneous Pacing (TCP), Surgical Airway, Needle Chest Decompression, Naso-gastric tube, and Vagal maneuvers.

Consults

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all of the absolute criteria. Criteria for this component are as follows:

If consult was required, reflect that it was made.

All orders requested, received, or denied by Supervisor/Medical Control should be documented

The name of the Supervisor or Medical Control Physician should be noted in the chart.

Patient Disposition

Standard: An evaluation of “satisfactory” completion of this documentation component shall require proper documentation of all the absolute criteria. Criteria for this component are as follows:

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Patient's response to therapy

Patient's refusal

If patient is refusing transport, the chart should reflect:

Complete patient assessment, PMHx, etc.

What means taken to convince the patient to allow transport to the hospital

Instructions given to the patient, possible complications, etc.

Signed patient refusal form.

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

If the patient's condition does not change during transport, document as *no change in patient's condition*. If patient is being transported to the hospital by alternate means, state so in narrative (e.g. *patient going by alternative means*).

Differential/ICD-9 Code

Standard: An evaluation of "satisfactory" completion of this documentation component shall require proper documentation of all of the absolute criteria. Criteria for this component are as follows:

The EMS provider should indicate in the Diagnosis screen and ICD-9 Code of the EMS report an assessment of what s/he believes to be wrong with the patient.

Goal: Proper documentation of 100% of the above criteria.

Acceptable Terminology:

This assessment may be in the form of a differential or a set of differentials. Unless there is absolutely no doubt as to the patient's acute diagnosis, the EMS provider should avoid putting his/her differential in absolute terms (e.g. *AMI*) and should instead use more general terminology (e.g. *Possible AMI or abdominal pain-unknown etiology*)

Avoid using R/O or Rule Out when stating your differential assessment. Doctors use this terminology when developing a series of tests to confirm their diagnosis.

The EMS provider should avoid simply putting the patient's chief complaint as his/her assessment. Do not use *Shortness of Breath*, instead using something more definitive (e.g. *Possible pulmonary edema secondary to CHF.*)

The charted differential should reflect which protocol(s) were used to manage the patient.

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Abbreviations

Acceptable Terminology:

See Appendix for a list of accepted medical abbreviations according to Medicare.

Documentation of patient refusals should include the following additional information:

- Pt/guardian has mental capacity to make informed decision as to consent/refusal
- Aid/transport was necessary
- Aid/transport was offered
- Pt's response to offer of aid/transport
- Consequences of refusal clearly explained to patient or guardian
- Pt/guardian understands consequences of refusal
- Pt/guardian still refuses aid/transport after being informed of consequences
- Signature of patient/witness
- Disposition of patient upon release
- Pt advised to call EMS back at any time if condition changes or they change their mind.

"No Patient" or "No Sick or Injured"

In order for an EMS unit to clear with "no patient" or "no sick or injured," the following criteria should be met:

- The patient should have left the scene prior to EMS arrival, **OR**
- The call itself should have been false (no such incident) **OR**
- The people or person in question should deny ANY physical complaint to the EMS personnel's direct questioning **AND**
- The EMS personnel should not be able to visualize ANY injury or evidence of injury or illness **AND**
- The people or person should appear competent to make such an assessment of themselves.

If the patient is the individual who actually called for or requested the ambulance, a "no patient" designation cannot be employed. Such a patient should have a refusal executed, as described previously in this policy.

Documentation

EMS shall document all demographic and operational information as outlined in the "Documentation Requirements" policy.

EMS shall clearly document that the above criteria were present.

The term **Assist Only** is not to be used on any call where a patient assessment has taken place. This term is used for lift assistance or moving assistance of a person only. Any response that a chief complaint was given, a complete refusal document or complete patient care report **should** be obtained **without exception**.

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An assist call occurs when an individual requires aid in completing a task but does not have a medical emergency. Examples might include help getting from their bed into a wheelchair or from a vehicle into a residence. Upon arrival the crew should investigate the reason why the response was initiated and determine if the caller has a medical emergency. A good example might be the “caller” cannot get from the bed to the restroom. You should ask if this is normal for the patient or what prohibits the “caller” from accomplishing the task. Do they get short of breath? Are they unsteady on their feet or have dizziness when they get up? **DO NOT ASSUME** that assist calls may not require medical treatment and transport. As a pre-hospital care provider, you should assess the condition of the individual requiring assistance-and if indicated-offer care, treatment, and transport. If you have indications that a medical condition exists and the “caller” refuses transport, a patient refusal should be obtained. This includes a complete set of vital signs and appropriate documentation of the assessment as well as any instructions you gave the “caller.”

After you have determined it is truly an assist call and not a medical emergency, the documentation **should** include the following information:

1. Required operational information
2. Name, address and phone number of person requesting assistance
3. The **exact reason** you were called for the assist documented in the narrative
4. How you concluded that a medical emergency did not exist
5. What actions were performed or what assistance was provided
6. Disposition of the person requesting assistance.

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Employees recertifying their Texas Department of State Health Services certification through examination should have scored a minimum of 70% on their National Registry Examination and provide the Clinical Department with a copy of their Texas Department of State Health Services certification.

Upgrading Authorization

In order for an employee to upgrade his/her certification from an EMT to EMT-Intermediate or EMT-Intermediate to EMT-Paramedic, he/she should provide the Clinical Department with a copy of the new TDSHS certification and test scores.

All employees wishing to upgrade authorization must complete training and evaluation procedures as outlined by the Training Department.

As a final step, the employee is expected to successfully complete a protocol exam at the new level of certification to verify a firm understanding of the clinical practices of TAMU EMRC.

Authorization is separate from certification. Every provider should have a current certification. The Medical Director is responsible for granting authorization.

*Authorization is required to provide pre-hospital or out-of-hospital care to any patient within the TAMU EMRC system. **Certification level does not necessarily dictate authorization level.** The Medical Director may authorize any provider to function at any level as per TDSHS Rule 157.11*

AT NO TIME prior to receipt of the Letter of Authorization will the employee be permitted perform any procedure or treatment modality which is reserved for the new level of authorization as outlined in the protocols. This may be considered practicing beyond the scope of authorization, and may be considered to be a termination offense, and one that is reportable to Texas Department of State Health Services.

Upon successful completion of these steps, a letter of authorization will be placed in the employee's file.

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Total Quality Management

Texas A&M University Emergency Medical Response Consortium embraces the opportunity to continuously monitor and improve the standards that have been established by TAMU EMRC for the delivery of pre-hospital health care. Furthermore, TAMU EMRC believes that all employees want to do the best they can for every patient and should provide a high level of pre-hospital care to every patient they encounter as long as the following are intact:

- The acceptable standard of care as well as employee performance expectations are clearly defined and measurable **AND**
- The employee(s) are provided adequate and appropriate equipment and/or tools to adhere to TAMU EMRC standards

Quality Improvement is a non-punitive process designed to provide opportunities for personal and/or professional growth for the individual as well as the agency.

Additionally, Quality Improvement within the TAMU EMRC system is established upon the principles of raising standards in all departments – patient care, vehicle maintenance, communications, operations and clinical, as well as billing and community outreach programs. This approach to QI relies upon the participation of all TAMU EMRC employees to be successful.

Quality Improvement within the TAMU EMRC system is based upon the following components:

1. Training and education of all levels of field personnel, directed at documented needs.
2. Assessment and evaluation of all patient-care oriented activities.
3. Involving all levels of personnel in establishing and ensuring the standard of care, protocols, procedures, and the assessment of care.
4. Effective hiring and selection process, orienting and training procedures, and evaluation of new personnel.
5. Establish regular review of patient-care oriented standards, protocols, and evaluation systems.

The **goals** of the clinical QI program are to:

1. Continuously and accurately evaluate the patient care oriented activities of all the EMS personnel in the system.
2. Continuously and accurately evaluate the operational, administrative, and procedural activities of our system as they relate to the delivery of patient care.
3. Accurately determine the training and educational needs of both individual EMS providers and the EMS system as a whole.
4. Provide continuous training and education to our providers which address their actual training and educational needs.
5. Identify and address areas of potential improvement in our system in all areas of patient care and operation.
6. Respond to complaints or concerns from both outside and inside the system about patient care or related activities in a timely and satisfactory manner.

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7. Regularly evaluate and re-evaluate protocols, procedures, and patient care standards, and improve and update them as needed.
8. Allow the field personnel at all levels to actively influence the system's operations as they relate to patient care.
9. Provide organizational management and administration with an accurate assessment tool for evaluating employee's performance in patient care related activities.

This approach to a successful QI program requires that TAMU EMRC make and maintain a commitment to continuous evaluation and improvement focused on response to such evaluations. The following are critical to the success of the program:

1. Utilization of objective assessment criteria
2. Assessment of methods of patient care by comparing documented and observed clinical care to established criteria.
3. Utilization of appropriate methods to solve the identified problem with the focus being on improving individuals as well as the service as a whole.
4. Reassessment of the problem area identified to ensure that the problem has, in fact, been corrected.

Critical QI functions extending beyond routine evaluation of field clinical performance and clinical care include:

1. An interface with continuing education that the findings of the QI process contribute materially to the content of the continuing education program.
2. Evaluation of on-line medical consults.
3. Incident investigations.

The above items are accomplished from a proper mixture of the following:

1. **Prospective:** defined as actions that take place prior to the actual patient encounter (i.e. education, continuing education, development of standing delegated orders, medication and supply inventory requirements, etc)
2. **Intermediate:** evaluation of medical consults, on-scene evaluations by a preceptor or Supervisor, or scenario/realism training.
3. **Retrospective:** consisting of clinical chart audits for documentation and treatment as well as accurate and complete performance evaluations of each employee. May also include feedback received from hospital follow-up and customer satisfaction surveys.

If an audit (chart or field) finds no procedural or clinical exceptions, an audit report shall be filed as supportive evidence of the employees' performance for inclusion in a performance appraisal.

	TAMU EMRC-EMS	CONTINUOUS QUALITY IMPROVEMENT (CQI)	
	Standard Delegated Orders – Clinical Guidelines	CG 39	Page 104
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If an audit (chart of field) finds clinical exceptions, then copies and the audit report should be reviewed by the Medical Director, thus beginning the exercise of problem solving. The Medical Director or his/her designee should consider the following minimum factors during his/her review of the case:

1. Was the exception a system failure?
2. Were there extenuating circumstances on scene or enroute that contributed to the situation?
3. Did lack of training contribute to the situation?
4. Did the treatment and/or procedure cause permanent harm or injury to the patient?
5. Was the treatment and/or procedure performed appropriate for the patient's illness/injury?
6. Was the employee authorized to provide the treatment and/or procedure performed?

Once the factors and principles have been identified, the administrative staff should carry out action and/or training as recommended by the Medical Director. Each investigation is conducted on a case-by-case basis with consideration given to each of the previously listed items.

	TAMU EMRC-EMS	HANDLING CHILD AND ELDERLY ABUSE AND NEGLECT	
	Standard Delegated Orders – Clinical Guidelines	CG 40	Page 105
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General Information

State law requires all professionals to report suspected cases of abuse (*Texas Family Code § 261.101*). Therefore, all employees are required to report actual and suspected cases of abuse. However, it is not the responsibility of TAMU EMRC personnel to confront and attempt to remediate abusive situations. When abuse is suspected, provide all assessment and treatment as indicated. Attempt to persuade the patient to be transported to the hospital regardless of the severity of the injuries.

Transport Situations – Upon arrival at the emergency room, privately and discreetly advise the nurse and/or physician of your suspicions.

Non-transport Situations – If transport is refused, leave the scene and request to meet with law enforcement and a Supervisor to meet at a near by location. When law enforcement and the Supervisor arrive, advise them of your suspicions.

In either situation, Child Protective Services or Adult Protective Services should be contacted by the TAMU EMRC employee(s) responding to the call and or witnessing the event.

Documentation

In all cases, employees should include a detailed assessment of the actual or suspected abuse situation in the patient's report. The assessment should describe the patient's condition, emotional state, and the surrounding environment. Also, employees should include details in the patient's report concerning the circumstances that created their suspicions of abuse and the employees' actions. The appropriate agency should be contacted within 24 hours after the employee witnesses the actual or suspected abuse.

Child and Elderly Abuse should be reported to Adult Protective Services (APS) or Child Protective Services (CPS). **1-800-252-5400** or <https://www.txabusehotline.org>

	TAMU EMRC-EMS	CARE AND TRANSPORTATION OF MINORS	
	Standard Delegated Orders – Clinical Guidelines	CG 41	Page 106
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Minors may only receive the treatment necessary to preserve life and prevent further injury in the absence of a consenting parent, guardian, or adult family member. Parents and guardians retain the right to consent to and refuse treatment for minors in their charge who are under eighteen (18) years of age unless the minor qualifies to consent to treatment. When a minor's parent(s) or guardian(s) refuse treatment for the minor, TAMU EMRC should not force any treatment but shall encourage treatment or recommend that the minor patient be transported to a hospital. If a minor's life is endangered by the parent's or guardian's refusal for treatment, or if personal abuse is suspected, the supervising Emergency Department physician shall be notified immediately and his or her instructions followed. TAMU EMRC personnel are required by law to report all cases of suspected abuse. Refer to the TAMU EMRC Field Operations Guidelines concerning Child Abuse for further guidance.

Married Minors

Married minors reserve the right to consent to or refuse treatment.

Unmarried, Pregnant Minors

Unmarried, pregnant minors may consent to or refuse treatment for pregnancy-related conditions only. Treatment for other conditions requires parental consent or refusal of treatment.

Abandoned Children

Section 262.301 of the Texas Family Code, as amended, requires TAMU EMRC personnel, without a court order, to take possession of a child who is thirty (30) days old or younger if the child is voluntarily delivered to the employee by the child's parent and the parent did not express an intent to return for the child.

A TAMU EMRC employee who takes possession of a child under these circumstances shall perform any act necessary to protect the physical health or safety of the child. The employee should notify his or her Supervisor of the situation as soon as possible.

	TAMU EMRC-EMS	INVENTORY MINIMUMS	
	Standard Delegated Orders – Clinical Guidelines	CG 42	Page 107
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Airway and Oxygen Supplies		Amount	Airway and Oxygen Supplies		Amount
Oropharyngeal Airways (5 total)		1 set	Pneumothorax Kit		1
Nasopharyngeal Airways (6 total)		1 set	Portable O2 Key		1
BVM Adult, Child, Neonate		1 ea	Lidocaine Jelly		1
PEEP Valve		1	KY Jelly		2
Nasal Cannula		2	Laryngoscope Handle		1
Non-Rebreather Mask		2	Mac Blades #1, 2, 3, 4		1 ea
Oxygen Tubing		1	Miller Blades #0, 1, 2, 3, 4		1 ea
Humidifier		1	Magill Forceps Adult, Pedi		1 ea
Nebulizer		1	Capno Mask Adult		1
Nebulizer Mask Adult		1	Capno Mask Pedi		1
Nebulizer Mask Pedi		1	SpO2 Sensors Adult, Pedi		1 ea
Endotracheal Tube 2.5-8.5		1 ea	NG Tube 18 fr.		1
Endotrol 7.0		1 ea	Rigid Suction Catheter with tubing		1
Endotracheal Tube Securing Device		1	Suction Catheters 5/6, 8, 10, 14, 18 fr.		1 ea
Quick Trach		1	Meconium Aspirator		1
Tube Check Bulb		1	60 cc Syringe with Cath Tip		1
ET Introducer (Bougie)		1	On Board suction and canister		1
Adult EtCO ₂ Colorimetric Device		1	Portable Suction Unit		1
Pedi EtCO ₂ Colorimetric Device		1	On Board O2 Cylinder with Regulator		1
Adult, Pedi, Infant Stylette		1 ea	Portable O2 Cylinder with Regulator		1
Bite Stick		1	Spare Portable O2 Cylinder and Regulator		1
Rubber Core O ₂ Rings		2	Ohio Wall Adaptor and Flowmeter		1
O ₂ “Christmas Tree”		1	EtCO ₂ Airway Adapter		1
O ₂ Demand Valve		1			
IV Equipment		Amount	IV Equipment		Amount
0.9% NaCl IV Fluid (500 or 1,000ml)		4	14 ga IV Catheter		3
0.9% NaCl IV Fluid (100 or 150ml)		1	16 ga IV Catheter		3
IV Start Kit		3	18 ga IV Catheter		4
Blood Draw Kit		2	20 ga IV Catheter		3
Saline Lock Kit		2	22 ga IV Catheter		2
Alcohol Swabs/Iodine Preps		15	24 ga IV Catheter		1
10gtt/ml Primary IV Set		3	Intraosseous Needles		1
60gtt/ml Primary IV Set		3	Vial Access Cannula		4
Buretrol IV Set		1	Blunt “Syringe” Access Cannula		4
Saline Lock		3	Vacutainer Barrel		2
1 cc Syringe		3	Luer Adapter		3
3 cc Syringe		3	18 ga Needle		5
5 cc Syringe		3	22 ga Needle		2
10 cc Syringe		3	25 ga Needle		2
20 cc Syringe		1	Scalp Vein Administration Needle		1
Medications		Amount	Medications		Amount
Acetaminophen Elixir	325mg/10.15ml	2	Atropine Sulfate	1mg/10ml	2
Activated Charcoal	25g	1	Baby Aspirin	81mg/tablet	10 tab.
Adenosine	6mg/2ml	2	Dextrose 50%	25g/50ml	1
Albuterol	2.5mg/3ml	1	Dextrose 25%	2.5g/10ml	1
Amiodarone	150mg/3ml	3	Diphenhydramine	50mg/1ml	1
Diltiazem	100mg/100ml	1	Dopamine pre-mix	400mg/250ml	1

	TAMU EMRC-EMS	INVENTORY MINIMUMS	
	Standard Delegated Orders – Clinical Guidelines	CG 42	Page 108
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Medications			Amount	Medications			Amount
Epinephrine 1:1,000	1mg/1ml	1		Nitroglycerin spray or tabs	0.4mg/dose	1/10 tabs	
Epinephrine 1:10,000	1mg/10ml	3		Oral Glucose	15g	1	
Labetalol	20mg/4ml	1		Ondansetron (Zofran) ODT	4mg ODT	2	
Lasix	40mg/4ml	2		Promethazine	25mg/1ml	1	
Lidocaine 2%	100mg/5ml	2		Sodium Bicarbonate 8.4%	50mEq/50ml	2	
Lidocaine pre-mix	2g/500ml	1		Solumedrol	125mg/1ml	1	
Magnesium Sulfate	1g/2ml	2		Tetracaine Drops	0.50%	1	
Multi-dose Atropine Sulfate	8mg/20ml	1		Thiamine	100mg/ml	1	
Narcan	2mg/2ml	2		Vasopressin	20unit/1ml	2	
Monitoring Devices			Amount	Monitoring Devices			Amount
Monitor/Defibrillator with cables		1		Wall Charger Cable for Monitor		1	
ECG Electrodes		20		Thermometer		1	
ECG Paper		1		BP Cuff Adult		1	
Defib/Pacer Pads (adult)		1		BP Cuff Large Adult		1	
Defib/Pacer Pads (pedi)		1		BP Cuff Child		1	
Prep Razor		1		BP Cuff Infant		1	
Spare Monitor Battery		1		Stethoscope		1	
BLS Equipment			Amount	BLS Equipment			Amount
Kerlix		2		Burn Sheets		2	
Flexicon Wrap		4		Padded arm board		1	
Triangular Bandages		4		Triage Tags		5	
Band-aids		10		OB Kit		1	
Cold Packs		2		Sterile Water for Irrigation		1	
Heat Packs		2		Sterile Saline for Irrigation		1	
Tape 3"		2		KED		1	
Tape 1"		2		Traction Splint		1	
4X4 Sterile Tubs		3		Air Splints (small, medium, large)		1 ea	
4X4 Nonsterile Loaf		½ loaf		Backboard		1	
Multi-Trauma Dresings		2		Scoop Stretcher		1	
Adaptic Occlusive Dressing		2					
Miscellaneous Equipment			Amount	Miscellaneous Equipment			Amount
Stretcher		1		Hepa Masks		2	
Stair Chair		1		Personal Protection Packs		2	
C-cell Batteries		2		Sharps Container		2	
AA cell Batteries		2		Biohazard Bag		5	
Penlight		1		Trash Can		1	
Broom or whisk broom		1		Carpuject Device		1	
Fitted Sheets		2		Urinal		1	
Disinfectant/cleaning solution		1		Extrication Helmet		1	
Gloves Small		1 box		EMS Safety vests		2	
Gloves Medium		1 box		Flashlight		1	
Gloves Large		1 box		TDSHS Provider License		1	
Gloves X-large		1 box		Fire Extinguisher		1	
Hand Cleaner Gel		1		Campus Map Book		1	
Goggles		2		No Smoking Signs		2	
Emesis Bags		2		Cellular Phone		1	
Gowns		2		Two-Way Radio		1	

	TAMU EMRC-EMS	INVENTORY MINIMUMS	
	Standard Delegated Orders – Clinical Guidelines	CG 42	Page 109
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Miscellaneous Equipment	Amount	Miscellaneous Equipment	Amount
Irrigation Basin	1	Hazardous Materials Quick Reference	1
Emesis Basin	1	Jumper Cables	1
Morgan Administration Set	1	Toughbook or clipboard with reports	1
Morgan Lens	1	Zoll Operators Guide	1
Broselow Tape	1	Unit Inventory List	1
Isolyzer	1	Protocol Manual	1
Primary Kit	Amount	Primary Kit	Amount
Triangular Bandages	2	Glucometer Test Strips	5
Tape 3"	1	Oropharyngeal Airways (5 total)	1 set
Tape 1"	1	Nasopharyngeal Airways (6 total)	1 set
4x4 Sterile Tub	1	Non-Rebreather Mask	1
ABD Pads	1	Nasal Cannula	1
Kerlix	2	Capno Mask Adult	1
Multi-trauma Dressing	1	Bite Stick	1
Adaptic Dressings	1	KY Jelly	1
Small Sharps Container	1	Magil Forceps Adult/Pedi	1 ea
24 ga IV Catheter	1	Laryngoscope Handle	1
22 ga IV Catheter	1	Mac Blades #1, 2, 3, 4	1 ea
20 ga IV Catheter	1	Miller Blades # 1, 2, 3, 4	1 ea
18 ga IV Catheter	1	Tube Check Bulb	1
16 ga IV Catheter	1	Adult EtCO ₂ Colorimetric Device	1
14 ga IV Catheter	1	Endotracheal Tube Securing Device	1
IV Start Kit	1	60cc Syringe	1
Blood Draw Kit	1	Endotracheal Tube 2.5-8.5	1 ea
10 gtt/ml Primary IV Set	1	Adult, Pedi, Infant Stylette	1 ea
0.9% NaCl IV fluid (500 or 1,000ml)	1	NG Tube 18 fr	1
IO Device/needle set	1	Endotrol 7.0	1
Alcohol Swabs/Iodine Swabs	5	Adenosine 6mg/2ml	2
1cc Syringe	1	Albuterol 2.5mg/3cc	1
3cc Syringe	1	Amiodarone 150mg/3ml	2
5cc Syringe	1	Atropine Sulfate 1mg/10ml	2
10cc Syringe	1	Baby Aspirin 81mg/tablet	10 tab.
20cc Syringe	1	Dextrose 50% 25g/50ml	1
Trauma Shears	1	Diphenhydramine 50mg/1ml	1
Penlight	1	Epinephrine 1:1,000 1mg/1ml	1
18 ga Needle	1	Epinephrine 1:10,000 1mg/10ml	2
22 ga Needle	1	Lidocaine 2% 100mg/5ml	2
25 ga Needle	1	Magnesium Sulfate 1g/2ml	1
Emesis Bag	1	Narcan 2mg/2ml	1
Biohazard Bag	1	Nitroglycerin spray or tabs 0.4mg/dose	1/10tabs
BP Cuff	1	Oral Glucose 15g	1
Stethoscope	1	Phenergan 25mg/1ml	1
Glucometer	1	Sodium Bicarbonate 8.4% 50mEq/50ml	1
Lancets	5	Solumedrol 125mg/ml	1
Adult BVM	1	Thiamine 100mg/ml	1
Nebulizer with Adult Mask	1 ea	Vasopressin 20unit/1ml	2

	TAMU EMRC-EMS	INVENTORY MINIMUMS	
	Standard Delegated Orders – Clinical Guidelines	CG 42	Page 110
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PAI Kit			PAI Kit		
Etomidate	20mg/10ml	1	5 cc syringe		2
Succinylcholine	200mg/10ml	1	18 ga Needle		2
Vecuronium w/Sterile H ₂ O	10mg/10ml	1 ea	3 cc syringe		1
Lidocaine 2%	100mg/10ml	1	Alcohol Swabs		4
10 cc syringe		3			
C-Collar Kit			C-Collar Kit		
		Amount			Amount
Multi-Size C-Collar Adult		2	C-Collar Pedi and Infant OR:		2 ea
Disposable Head Immobilizer		2	Multi-Size C-Collar Pedi		2
Webbing		2			
Controlled Medications**			Controlled Medications**		
		Amount			Amount
Fentanyl	250mcg/5ml	1	Valium	10mg/2ml	1
Morphine	10mg/1ml	1	Versed	5mg/1ml	1
**These medications are not required for units designated as reserve status. They may be transferred on to Reserve units upon being placed in service.					

I verify that the above Inventory and Medication List consists of all equipment, supplies, and medication items and specify a variety of sizes and types of equipment adequate to meet the needs of patients ranging in size from newborn to large adult and specify quantities appropriate to the provider's call volume. This standard shall be in effect from February 1, 2011 through January 31, 2013.

David C. Teller, M.D.
Medical Director
Texas A&M University EMS

Date: ____/____/____

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ADULT BEHAVIORAL



	TAMU EMRC-EMS	BEHAVIORAL ASSESSMENT	
	Standard Delegated Orders – Adult Behavioral	AB 01	Page 113
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Criteria and History:

- **Historical Findings:**
 - PMHx of psychiatric problems
 - Use of psychiatric medication
 - Substance Abuse
- **Physical Findings:**
 - Altered mental status
 - Evidence of trauma
 - Fear, anger, confusion, or hostility

Assessment:

- Determine that the scene is safe before entering
- GCS
- C.A.B.C.
- Secondary Assessment
- Vital signs
- Blood Glucose
- Pertinent PMHx
 - Does the patient have previous suicide attempts or ideations?
 - Is the patient under care of a psychologist/psychiatrist?
 - Is the patient cared for by others or self-reliant?
- SUBJECT IN CUSTODY RISK ASSESSMENT SCALE (SICRAS)

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

- Possible causes of Altered Mental Status include, but are not limited to, hypoxia, hypoglycemia, hyperglycemia, sepsis, overdose, CVA, etc.
 - Refer to appropriate protocol for treatment based on assessments
 - Any changes in patient condition, refer to appropriate protocol
-

	TAMU EMRC-EMS	ABUSE / NEGLECT	
	Standard Delegated Orders – Adult Behavioral	AB 02	Page 114
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent events
- **Physical Findings:**
 - Contusions at different healing stages
 - Malnourished appearance
 - Withdrawn

Assessment:

- Behavioral Assessment

First Responder:

- Apply pressure to any hemorrhage
- O₂ via most appropriate method
- Spinal Motion Restriction, if indicated
- Bandaging / splinting
- Report abuse to Adult Protective Services (APS)

Contact information for APS:
1-800-252-5400 or
<https://www.txabusehotline.org>

EMT Basic:

- Same as above

EMT Intermediate:

- Vascular Access

Paramedic:

- C-Spine clearance, if indicated
- Consider pain management if appropriate

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**
-

	TAMU EMRC-EMS	AGGRESSIVE / VIOLENT BEHAVIOR	
	Standard Delegated Orders – Adult Behavioral	AB 03	Page 115
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Known violence
 - Aggression
- **Physical Findings:**
 - Agitation
 - Offensive posture
 - Combative
 - Hallucinations

Assessment:

- Behavioral Assessment

First Responder and EMT Basic:

- Reassure patient
- If patient is physically harmful, soft restraints
- O₂ via most appropriate method
- Spinal Motion Restriction, if indicated

EMT Intermediate:

- Vascular Access

Paramedic:

- C-Spine clearance, if indicated
- Midazolam 2 – 10 mg IV/IM/IO/IN
- OR**
- Diazepam 2 – 10 mg IV/IO

Consult:

- Additional medication for sedation / chemical restraint

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**
-

	TAMU EMRC-EMS	ANXIETY / EMOTIONAL DISTRESS	
	Standard Delegated Orders – Adult Behavioral	AB 04	Page 116
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of Recent Traumatic Event
 - Post Trauma Stress Disorder
- **Physical Findings:**
 - Agitation
 - Hyperventilation
 - Hallucinations

Assessment:

- Behavioral Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate

- Vascular Access

Paramedic:

- C-Spine clearance, if indicated
- Midazolam 2 – 10 mg IV/IM/IO/IN
- **OR**
- Diazepam 2 – 10 mg IV/IO

Consult:

- Additional medication for sedation / chemical restraint

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**
-

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ADULT CARDIAC



	TAMU EMRC-EMS	CARDIAC ASSESSMENT	
	Standard Delegated Orders – Adult Cardiac	AC 01	Page 119
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Preceding Symptoms
 - CPR and/or Treatment PTA
 - PMHx
 - Elderly, female, diabetic
- **Physical Findings:**
 - Altered mental status
 - Slow, fast or absent pulse
 - Irregular pulse
 - Dyspnea/Apnea
 - Chest pain/Palpitations
 - Diaphoresis
 - Pale, ashen or mottled skin

Assessment:

- C.A.B.C.
- Secondary Assessment
- Vital signs
- Blood Glucose
- Lung sounds
- GCS
- Fibrinolytic inclusion/exclusion criteria
- OPQRST
- ASPN
- SAMPLE
- Pertinent PMHx
 - Include history of Viagra, Levitra, Cialis, or similar medications within last 48 hours (Do not Administer NTG)

Fibrinolytic Inclusion/Exclusion Checklist
Inclusion

- 18 years or older
- Ischemic discomfort 30 minutes – 12 hours
- ST Elevation > 1mm in 2 or more contiguous limb leads or > 2mm in contiguous precordial leads
- Presumed new LBBB

Exclusion

- Hx of CVA or TIA
- Intracranial neoplasms, aneurysm
- Recent surgery or trauma, or active internal hemorrhage
- B/P > 180/110 mmHg
- Cardiogenic shock / PE with intubation
- Use of oral anticoagulants within 3 days
- Suspected AAA
- Use of cocaine or amphetamines within 3 days
- Pregnancy

Critical Points:

- Refer to appropriate protocol for treatment based on assessments
 - Any changes in patient condition, refer to appropriate protocol
-

	TAMU EMRC-EMS	ACUTE CORONARY SYNDROME / AMI	
	Standard Delegated Orders – Adult Cardiac	AC 02	Page 120
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Chest discomfort
 - Back, shoulder, neck, jaw, epigastric discomfort
 - Discomfort suggestive of AMI with associated symptoms: dyspnea, nausea, diaphoresis, weakness

Assessment:

- Cardiac Assessment
- Transmit 12-Lead to receiving facility from land line if time permits

First Responder and EMT Basic:

- O₂ via most appropriate method
- ASA 324 mg PO regardless of prior ASA use
- Fibrinolytic Inclusion/Exclusion checklist

Fibrinolytic Inclusion/Exclusion Checklist
Inclusion

- 18 years or older
- Ischemic discomfort 30 minutes – 12 hours
- ST Elevation > 1mm in 2 or more contiguous limb leads or > 2mm in contiguous precordial leads
- Presumed new LBBB

Exclusion

- Hx of CVA or TIA
- Intracranial neoplasms, aneurysm
- Recent surgery or trauma, or active internal hemorrhage
- B/P > 180/110
- Cardiogenic shock / PE with intubation
- Use of oral anticoagulants within 3 days
- Suspected AAA
- Use of cocaine or amphetamines within 3 days
- Pregnancy

EMT Intermediate:

- Vascular Access
 - Secondary Vascular Access
 - Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min
-

	TAMU EMRC-EMS	ACUTE CORONARY SYNDROME / AMI	
	Standard Delegated Orders – Adult Cardiac	AC 02	Page 121
<u>TOC</u>			

Paramedic:

- NTG 0.4 SL
 - Use with caution in Right-sided AMI
 - q 5 min x 3 prior to IV if B/P > 100 mmHg
 - Once IV established, NTG can be administered q 5 min if B/P > 100 mmHg
- Right sided AMI
 - Fluid Bolus
- Promethazine 12.5 mg IV/IO/IM
 - For N/V
 - May be repeated x 1 if N/V persists after 15 minutes
- Pain Management
- Labetalol 10 mg SLOW IV
 - Use with caution, see contraindications

Nitroglycerin, in any form, is not to be administered to patients that have taken Viagra (Sildenafil citrate) or Levitra (Vardenafil HCl) within the last **24** hours.

Nitroglycerine is not to be administered to patients who have taken Cialis (Tadalafil) within the last **48** hours.

Fatal hypotension has been reported when Nitroglycerine or other Nitrates are given to patients who have used Viagra or Levitra in the last 24 hours, and in patients who have used Cialis in the last 48 hours.

If Right sided AMI is suspected, IV should be established prior to administration of NTG.

Atropine should be used with caution in the setting of an Acute Coronary Syndrome (ACS) and should be avoided unless systolic BP is < 80 mmHg and/or heart rate <40 bpm

Contraindications for Labetalol
Absolute:

- Heart Rate < 60 bpm
- Systolic Blood Pressure < 100 mmHg
- 2nd and 3rd degree heart block
- 1st degree heart block with PR interval > 0.24 seconds
- STEMI precipitated by cocaine use

Relative:

- Pregnancy – 2nd and 3rd trimester
- Active CHF
- Active Asthma
- COPD

Consult:

- Additional Pain Management

Transport to appropriate facility

College Station Medical Center
St. Joseph's Regional Health Center

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**

	TAMU EMRC-EMS	ASYSTOLE	
	Standard Delegated Orders – Adult Cardiac	AC 03	Page 122
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Medical etiology ▪ Physical Findings: – Unconscious – Pulseless – Agonal respirations; apnea ▪ ECG Findings: – Asystole confirmed in two or more leads	▪ Determine if resuscitation is medically inappropriate – Normothermic rigor-mortis – Injuries Incompatible with life – Decomposition – Lividity – Pulseless, apneic patients in multiple casualty situations – Proper DNR documentation
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Assessment:

▪ Cardiac Assessment	Perform at least 20 minutes of quality compressions (verified by CPR feedback device if available) prior to moving patient unless environment is unsuitable. Do not interrupt compressions for ALS procedures
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First Responder:

▪ CPR – BVM with high flow O₂ – Maintain open airway with OPA ▪ Application of AED	
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EMT Basic:

▪ CPR – BVM with high flow O₂ – ResQPOD – Maintain open airway with OPA ▪ Combitube	Remove ResQPOD immediately if ROSC occurs
--	--

EMT Intermediate:

▪ Intubate ▪ Vascular Access ▪ Naloxone 2 – 8 mg IV/IO/IN for suspected overdose	<u>ET Tube Confirmation</u> – Confirm with 5 methods as per procedure <u>Capnometry Reference:</u> – EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg
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	TAMU EMRC-EMS	ASYSTOLE	
	Standard Delegated Orders – Adult Cardiac	AC 03	Page 123
TOC			

Paramedic:

- Pacing as soon as possible
- Epinephrine 1:10,000 1 mg IV/IO or 2 mg ET (do not repeat)
- Vasopressin 40 U IV/IO
 - q 5 min
- Induce hypothermia if arrest continues > 5 minutes (**see APP 18**)
- Atropine 1 mg IV/IO or 2 mg ET
 - q 3 -5 min if beneficial response is seen
 - Max dose of 0.04 mg/kg
- Sodium Bicarbonate 1 mEq/kg IV/IO
- #18 fr Nasogastric tube placement

Administer Epinephrine ET ONLY if NO IV/IO ACCESS; once IV/IO is established, administer Vasopressin. It is acceptable to administer Epinephrine initially or 3-5 minutes following the first administration of Vasopressin.

If you suspect acidosis, use Sodium Bicarbonate early in treatment plan.

Consult:

- After 20 minutes of quality chest compressions, consider field termination if patient meets criteria per medical termination procedure

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**

	TAMU EMRC-EMS	BRADYCARDIA	
	Standard Delegated Orders – Adult Cardiac	AC 04	Page 124
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Weak, dizzy
 - Chest pain
 - Pulmonary edema
 - Altered mental status (AMS)
 - Systolic blood pressure < 90 mmHg
- **ECG Findings:**
 - Any underlying cardiac rhythm or a ventricular rate < 60 bpm

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access

Paramedic:

- Consider Pacing
- Atropine 0.5 mg – 1 mg IV/IO
 - q 3 – 5 min if beneficial response seen
- Midazolam 2 – 5 mg IV/IV/IO/IN
 - For sedation prior to pacing
- Dopamine Infusion 5-20 mcg/kg/min
 - Administer if patient remains hypotensive 5 minutes after fluid bolus

Bradycardia may be seen in the presence of AMI. You should treat the original pathology rather than the after-effect (MONA before Atropine) in most cases.

High degree blocks with wide complexes will most likely respond to pacing.

High degree blocks with narrow complexes may respond to atropine.

Dopamine Chart (gtts/min) (400mg/250 ml Normal Saline)

KGS	40	50	60	70	80	90	100
MCG/MIN							
5	8	10	12	13	15	17	19
10	15	19	22	26	30	33	37
15	22	28	33	39	44	50	56
20	30	37	44	52	59	67	74
25	37	46	56	65	74	82	93

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol

	TAMU EMRC-EMS	CHF / PULMONARY EDEMA	
	Standard Delegated Orders – Adult Cardiac	AC 05	Page 125
<u>TOC</u>			

Criteria and History:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Prior history – Orthopnea – Acute difficulty breathing at night – Paroxysmal Nocturnal Dyspnea (PND) ▪ Physical Findings: <ul style="list-style-type: none"> – Dyspnea with auscultated findings of pulmonary edema – Systolic B/P > 90 mmHg ▪ ECG Findings: <ul style="list-style-type: none"> – Atrial Fibrillation may be present | <p>Obtain temperature to rule out pneumonia</p> <p>Paroxysmal Nocturnal Dyspnea (PND) is a medical symptom wherein people with <u>congestive heart failure</u> develop difficulties <u>breathing</u> after laying flat. PND commonly occurs several hours after a person with heart failure has fallen asleep. PND resolves quickly once a person awakens and sits upright.</p> |
|--|---|

Assessment:

- Cardiac Assessment

First Responder:

- O₂ via most appropriate method

EMT Basic:

- CPAP 3 – 10 cmH₂O

EMT Intermediate:

- Vascular Access

Paramedic:

- NTG 0.4 – 0.8 SL q 5 min x 3 prior to Vascular Access if B/P > 100 mmHg
 - Once vascular access established, NTG can be administered q 5 min if B/P > 100 mmHg
 - Administer prior to Furosemide
- Furosemide as noted:
 - Should not administer in presence of fever
 - Administer after NTG
 - If patient is taking Furosemide, administer amount equal to patient's total daily dose
 - If patient is not taking Furosemide, administer 40 mg SLOW IV
- Morphine Sulfate 2 – 5 mg IV/IO
 - q 5 minutes
- Consider need for PAI

Consult:

- Consult for additional Morphine Sulfate

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	HYPOTHERMIA INDUCED ARREST	
	Standard Delegated Orders – Adult Cardiac	AC 06	Page 126
TOC			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Pulseless
 - Agonal respirations; apnea
 - Environmental evidence of hypothermia
- **ECG Findings:**
 - Any pulseless rhythm

Assessment:

- Cardiac Assessment
- Core Temperature

First Responder:

- CPR
 - BVM ventilation with warm 100% O₂ Humidified
- Warm Patient
 - Remove wet clothing
 - Heat packs to arm pits and groins
- Application of AED

EMT Basic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ ResQPOD ▪ Combitube | Remove ResQPOD immediately if ROSC occurs |
|--|--|

EMT Intermediate:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Intubation ▪ Vascular Access <ul style="list-style-type: none"> – Use warm fluid | <p><u>ET Tube Confirmation</u></p> <ul style="list-style-type: none"> – Confirm with 5 methods as per procedure <p><u>Capnometry Reference:</u>
EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg</p> |
|---|---|

Paramedic:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ If V-Fib <ul style="list-style-type: none"> – Defibrillation ▪ Refer to appropriate rhythm protocol for medication reference | <p><u>Defibrillation Reference</u></p> <ul style="list-style-type: none"> – 1 defibrillation at 200 j (360 j monophasic) – Do not repeat defibrillation and do not medicate if temperature is below 85° F |
|---|---|

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	NARROW COMPLEX TACHYCARDIA - STABLE	
	Standard Delegated Orders – Adult Cardiac	AC 07 - A	Page 127
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of SVT / use of adenosine
 - History of A-Fib or A-Flutter or WPW
 - **Physical Findings:**
 - Systolic B/P > 90 mmHg
 - Chest pain with dyspnea, lethargy, dizziness, pulmonary edema, or AMS
 - **ECG Findings:**
 - Narrow Complex SVT (rate > 150 and QRS < 0.12 seconds)
-

Assessment:

- Cardiac Assessment
-

First Responder and EMT Basic:

- O₂ via most appropriate method
-

EMT Intermediate:

- Vascular Access
 - Fluid Bolus if B/P is < 90 mmHg
-

Paramedic:

- Valsalva maneuver by patient
 - Adenosine 6 mg RAPID IV/IO followed by 20 ml flush
 - If no conversion, give 12 mg RAPID IV/IO followed by 20 ml flush of NS
 - May repeat x 1 as 12 mg RAPID IV/IO followed by 20 ml flush of NS
 - Do not exceed 30 mg total dose of Adenosine
 - Diltiazem 10 – 20 mg IV
 - Followed by infusion of 80 – 90 mg at 5 mg/hr
 - Amiodarone 150 mg IV/IO over 10 min
 - Mix 150 mg in 100 ml of NS
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	NARROW COMPLEX TACHYCARDIA - UNSTABLE	
	Standard Delegated Orders – Adult Cardiac	AC 07 - B	Page 128
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of SVT / use of adenosine
 - History of A-Fib or A-Flutter
- **Physical Findings:**
 - Systolic B/P < 90 mmHg and/or any of the following:
 - Chest pain
 - Dyspnea
 - Lethargy
 - Dizziness
 - Pulmonary edema
 - AMS
- **ECG Findings:**
 - Narrow Complex SVT (rate > 150 and QRS < 0.12 seconds)

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
 - Fluid Bolus if B/P is < 90 mmHg

Paramedic:

- Midazolam 2 – 5 mg IV/IM/IO/IN
 - For sedation prior to cardioversion, if patient condition allows
- Synchronized Cardioversion
- Adenosine 6 mg RAPID IV/IO followed by 20 ml flush
- If no conversion, give 12 mg RAPID IV/IO followed by 20 ml flush of NS
 - May repeat x 1 as 12 mg RAPID IV/IO followed by 20 ml flush of NS
 - Do not exceed 30 mg total dose of Adenosine
- Diltiazem 10 – 20 mg IV
 - Followed by infusion of 80 – 90 mg at 5 mg/hr
- Amiodarone 150 mg IV/IO over 10 min
 - Mix 150 mg in 100 ml of NS

Cardioversion reference:

SVT

Biphasic	Monophasic
75 j	50 j
120 j	100 j
150 j	200 j
200 j	300 j
	360 j

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol

	TAMU EMRC-EMS	NON-TRAUMATIC CHEST PAIN	
	Standard Delegated Orders – Adult Cardiac	AC 08	Page 129
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
 - **Physical Findings:**
 - Chest discomfort
 - Back, shoulder, neck, jaw, epigastric discomfort
 - **ECG Findings:**
 - No evidence of ischemia or injury
-

Assessment:

- Cardiac Assessment
-

First Responder and EMT Basic:

- O₂ via most appropriate method
-

EMT Intermediate:

- Vascular Access
 - Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min
-

Paramedic:

- Promethazine 12.5 mg IV/IO/IM
 - For N/V
 - May be repeated x 1 if N/V persists after 15 minutes
 - Pain Management
-

Consult:

- Additional Pain Management
-

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	POST RESUSCITATION MANAGEMENT	
	Standard Delegated Orders – Adult Cardiac	AC 09	Page 130
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Post cardiac arrest
- **Physical Findings:**
 - Patient with spontaneous circulation (palpable carotid/radial pulse) AFTER being treated for any non-perfusing rhythm
- **ECG Findings:**
 - Any perfusing rhythm

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
- Fluid Bolus

Paramedic:

- Induce Hypothermia (**see APP 18**)
- Control shivering with:
 - Midazolam 0.1 mg/kg IV/IO
 - Vecuronium 0.1 mg/kg IV/IO Max 10mg
- Amiodarone loading dose of 150 mg IV over 10 min
 - Mix 150 mg in 100 ml of NS
 - If ventricular rhythms
- Amiodarone infusion 1 mg/min
 - Mix 150 mg in 100 ml of NS
 - If patient previously treated with Amiodarone for ventricular rhythms
- Lidocaine 1 – 1.5 mg/kg IV
 - If patient did not previously receive and converted from a ventricular rhythm WITHOUT bradycardia
- Lidocaine Infusion 2 – 4 mg/min
 - If patient received Lidocaine prior to Return of Spontaneous Circulation (ROSC)
- Dopamine Infusion 5 – 20 mcg/kg/min
 - Administer if patient remains hypotensive 5 minutes after fluid bolus
- Midazolam 5 mg to sedate an awaking intubated patient

- Amiodarone 150 mg over 10 minutes if no bolus was given
- Amiodarone 1 mg/min for a maintenance infusion

Remove ResQPOD immediately if ROSC Occurs

Dopamine Chart (gtts/min) (400mg/250 ml Normal Saline)							
KGS	40	50	60	70	80	90	100
MCG/MIN							
5	8	10	12	13	15	17	19
10	15	19	22	26	30	33	37
15	22	28	33	39	44	50	56
20	30	37	44	52	59	67	74
25	37	46	56	65	74	82	93

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	PULSELESS ELECTRICAL ACTIVITY	
	Standard Delegated Orders – Adult Cardiac	AC 10	Page 131
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Unconscious
 - Pulseless
 - Agonal respirations; apnea
- **ECG Findings:**
 - Pulseless rhythm; not V-fib, V-Tach, Asystole

Assessment:

- Cardiac Assessment

Perform at least 20 minutes of quality compressions (verified by CPR feedback device if available) prior to moving patient unless environment is unsuitable.

Do not interrupt compressions for ALS procedures

First Responder:

- CPR
- BVM Ventilation with high-flow O₂
- Maintain airway with OPA
- Application of AED

EMT Basic:

- ResQPOD
- Combitube

Remove ResQPOD immediately if ROSC occurs

EMT Intermediate:

- Intubate
- Vascular Access
- Fluid Bolus
- Naloxone 2 – 8 mg IV/IO/IN for suspected overdose

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

	TAMU EMRC-EMS	PULSELESS ELECTRICAL ACTIVITY	
	Standard Delegated Orders – Adult Cardiac	AC 10	Page 132
<u>TOC</u>			

Paramedic:

▪ Epinephrine 1:10,000 1 mg IV/IO or 2 mg ET (do not repeat) ▪ Vasopressin 40 U IV/IO – q 5 min ▪ Induce hypothermia if arrest continues > 5 minutes (see APP 18) ▪ Atropine 1 mg IV/IO or 2 mg ET if heart rate < 60 – q 3 – 5 min if beneficial response is seen – Max dose 0.04 mg/kg ▪ Chest Decompression if pneumothorax is present ▪ Consider Pacing for heart rate < 60 ▪ Sodium Bicarbonate 1 mEq/kg IV/IO ▪ #18 fr Nasogastric tube placement	Administer Epinephrine ET ONLY if NO IV/IO ACCESS; once IV/IO is established, administer Vasopressin. It is acceptable to administer Epinephrine initially or 3-5 minutes following the first administration of Vasopressin. Consider all other treatable causes – Hypoxia – ventilation – Hypoglycemia – dextrose – Hypothermia – warming – Hyperkalemia – calcium gluconate and sodium bicarbonate – Acidosis – ventilation and sodium bicarbonate – Massive MI – Heart cath – Hypovolemia/hypotension – fluid replacement – Pulmonary embolism – surgery – Cardiac tamponade – pericardiocentesis – Drug overdose – Naloxone – Tension pneumothorax – chest decompression
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Consult:

- After 20 minutes of quality chest compressions, consider field termination if patient meets criteria per medical termination procedure

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	VENTRICULAR ECTOPY	
	Standard Delegated Orders – Adult Cardiac	AC 11	Page 133
<u>TOC</u>			

Criteria and History:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Medical etiology ▪ Physical Findings: <ul style="list-style-type: none"> – Chest pain with weakness, dizziness, dyspnea, irregular rhythm ▪ ECG Findings: <ul style="list-style-type: none"> – Six or more PVC's per minute – Multiform PVC's – Couplets, triplets – Evidence of AML in absence of bradycardia | <ul style="list-style-type: none"> ▪ Potential for the occurrence of R-on-T phenomenon ▪ If patient's pulse is < 60 BPM, treat bradycardia first |
|--|--|

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access

Paramedic:

- Amiodarone 150 mg IV over 10 min
 - Mix 150 mg in 100 ml NS
- Amiodarone infusion 1 mg/min
 - Mix 150 mg in 100 ml NS
- Lidocaine 1 mg/kg IV
 - q 5 minutes as 0.5 mg/kg up to 3 mg/kg total
- Lidocaine Infusion 2 – 4 mg/min
 - If successful conversion of the rhythm with Lidocaine bolus
- Magnesium Sulfate 1 – 2 g dilute in 10 ml of NS SLOW IV/IO

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA	
	Standard Delegated Orders – Adult Cardiac	AC 12	Page 134
TOC			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Unconscious
 - Pulseless
 - Agonal respirations; Apnea
- **ECG Findings:**
 - V-Fib or Pulseless V-Tach

Assessment:

- Cardiac Assessment
 - Consider all potential non-cardiac causes
 - Remove False Teeth, Secretions, or any vomitus

Perform at least 20 minutes of quality compressions (verified by CPR feedback device if available) prior to moving patient unless environment is unsuitable.

Do not interrupt compressions for ALS procedures

First Responder:

- Continuous CPR
 - BVM ventilation with 100% O₂
 - Maintain open airway with OPA
- Application of AED

EMT Basic:

- Continuous CPR
 - ResQPOD
 - Combitube
- Remove ResQPOD immediately if ROSC occurs**

EMT Intermediate:

- Intubate; respiratory rate 8 breaths per minute
 - Vascular Access
 - Continuous CPR
 - Naloxone 2 – 8 mg IV/IO/IN for suspected overdose
- ET Tube Confirmation**
- Confirm with 5 methods as per procedure
- Capnometry Reference:**
- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

	TAMU EMRC-EMS	VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA	
	Standard Delegated Orders – Clinical Guidelines	AC 12	Page 135
TOC			

Paramedic:

- If witnessed, immediate defibrillation
- Continuous chest compressions 1 – 2 minutes prior to defibrillation and medication administration
 - If arrest is not witnessed by responding unit
 - BVM ventilation with 100% O₂
 - Maintain open airway with OPA
- Continuous CPR
- Deliver Biphasic defibrillation
- Intubate; respiratory rate 8 breaths per minutes
- Vascular Access
- Epinephrine 1:10,000 1 mg IV/IO or 2 mg ET (do not repeat)
- Vasopressin 40 U IV/IO
 - q 5 min
- Induce hypothermia if arrest continues > 5 minutes (**see APP 18**)
- Amiodarone 300 mg IV/IO
 - May give additional 150 mg IV/IO x 1 after 5 minutes if VF / Pulseless VT still present
 - Do not exceed 450 mg total dose
- Lidocaine 1.5 mg/kg IV/IO or 3 mg/kg ET
 - If VF/VT refractory to Amiodarone administration
 - May repeat q 5 minutes as 0.75 mg/kg IV/IO if VF/Pulseless VT still present
 - Maximum 3 doses or 3 mg/kg Lidocaine IV/IO total
- Magnesium Sulfate 1 – 2 g dilute in 10 ml of NS slow IV/IO
- Sodium Bicarbonate 1mEq/kg IV/IO
- #18 fr Nasogastric tube placement

Defibrillation Reference

- 1 defibrillation at 200 j (360 j monophasic) every 5 cycles of CPR (2-3 minutes) if patient remains in V-Fib or Pulseless V-Tach

Administer Epinephrine ET ONLY if NO IV/IO ACCESS; once IV/IO is established, administer Vasopressin. It is acceptable to administer Epinephrine initially or 3-5 minutes following the first administration of Vasopressin.

- Only Administer Magnesium Sulfate with:
 - Refractory V-Fib
 - Torsades Des Pointes
- Naloxone for suspected Drug Overdose
- Sodium Bicarbonate for Acidosis and Tricyclic Antidepressant (TCA) overdose

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol

	TAMU EMRC-EMS	WIDE COMPLEX TACHYCARDIA - STABLE	
	Standard Delegated Orders – Adult Cardiac	AC 13 - A	Page 136
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
 - **Physical Findings:**
 - Hemodynamically stable
 - Palpitations
 - **ECG Findings:**
 - Ventricular Tachycardia, Wide Complex (QRS > 0.12 seconds)
-

Assessment:

- Cardiac Assessment
-

First Responder and EMT Basic:

- O₂ via most appropriate method
-

EMT Intermediate:

- Vascular Access
-

Paramedic:

- Amiodarone 150 mg IV/IO over 10 min
 - Mix 150 mg in 100 ml NS
 - Amiodarone infusion 1mg/min
 - Mix 150 mg in 100 ml NS
 - Lidocaine 1 mg/kg IV/IO
 - q 5 minutes as 0.5 mg/kg up to 3 mg/kg total
 - Lidocaine Infusion 2 – 4 mg/min
 - If successful conversion of the rhythm with lidocaine bolus
 - Magnesium Sulfate 1 -2 g dilute in 10 ml of NS SLOW IV/IO
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	WIDE COMPLEX TACHYCARDIA - UNSTABLE	
	Standard Delegated Orders – Adult Cardiac	AC 13 - B	Page 137
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
 - **Physical Findings:**
 - Systolic B/P < 90 mmHg and/or any of the following
 - Chest pain
 - Dyspnea
 - Lethargy
 - Dizziness
 - Pulmonary edema
 - AMS
 - **ECG Findings:**
 - Ventricular Tachycardia, Wide Complex (QRS > 0.12 seconds)
-

Assessment:

- Cardiac Assessment
-

First Responder and EMT Basic:

- O₂ via most appropriate method
-

EMT Intermediate:

Vascular Access

Paramedic:

- Midazolam 2 – 5 mg IV/IM/IO/IN
 - For sedation prior to cardioversion, if patient condition allows
- Synchronized Cardioversion
 - 75j
 - 120j
 - 150j
 - 200j
- Amiodarone 150 mg IV over 10 min
 - Mix 150 mg in 100 ml NS
- Amiodarone infusion 1mg/min
 - Mix 150 mg in 100 ml NS
- Lidocaine 1 mg/kg IV/IO
 - q 5 minutes as 0.5 mg/kg up to 3 mg/kg total
- Lidocaine Infusion 2 – 4 mg/min
 - If successful conversion of the rhythm with lidocaine bolus
- Magnesium Sulfate 1 -2 g dilute in 10 ml of NS SLOW IV/IO

Cardioversion reference:
V-Tach

Biphasic	Monophasic
75 j	100 j
120 j	200 j
150 j	300 j
200 j	360 j

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

ADULT ENVIRONMENTAL



	TAMU EMRC-EMS	ENVIRONMENTAL ASSESSMENT	
	Standard Delegated Orders – Adult Environmental	AE 01	Page 139
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Exposure to extreme temperatures
 - Envenomation
 - Wilderness exposure
 - Exposure to hazardous materials
 - **Physical Findings:**
 - Hyperthermia/Hypothermia
 - Altered Mental Status
 - Shivering
 - Frostbite
 - Dyspnea
 - Evidence of bite, sting or exposure to chemicals
 - Nausea/Vomiting
 - Dizziness/Weakness
 - Sweating
 - Abdominal pain
-

Assessment:

- C.A.B.C.
- Secondary Assessment
- Vital signs
- ECG 3-Lead and 12-Lead if appropriate
 - Right sided 12-Lead if indicated
- Blood Glucose
- Temperature
- Lung sounds
- GCS
- OPQRST
- ASPN
- SAMPLE
- Length of Exposure

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

- **Refer to appropriate protocol for treatment based on assessments**
 - **Any changes in patient condition, refer to appropriate protocol**
-

	TAMU EMRC-EMS	COLD RELATED EMERGENCY	
	Standard Delegated Orders – Adult Environmental	AE 02	Page 140
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Immersion or exposure to cold temperatures
- **Physical Findings:**
 - Core temperature < 96 degrees F
 - Shivering
 - Altered mental status
 - Cyanosis

Assessment:

- Environmental Assessment

First Responder and EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ Prevent further heat loss ▪ Passive rewarming | Passive rewarming: <ul style="list-style-type: none"> ▪ Remove wet clothing ▪ Warm blankets ▪ Wrap heat packs and apply to axillary and groin regions |
|---|--|

EMT Intermediate:

- | | |
|---|--------------------|
| <ul style="list-style-type: none"> ▪ Vascular Access | Use warm IV fluids |
|---|--------------------|

Paramedic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ 3-Lead ECG ▪ 12-Lead ECG | For persistent shivering or active seizures, refer to Seizure protocol |
|---|--|

Consult:

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**
-

	TAMU EMRC-EMS	HEAT RELATED EMERGENCY	
	Standard Delegated Orders – Adult Environmental	AE 03	Page 141
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Exposure to heat

 - **Physical Findings:**
 - Environmental potential of heat related emergency
 - Normothermic or hyperthermic with weakness, dizziness, N/V, syncope, sweating

 - **ECG Findings:**
 - Tachycardia
-

Assessment:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Environmental Assessment | <u>Heat Cramps</u>
– Cramps in extremities or abdomen
<u>Heat Exhaustion</u>
– Temperature normal or 1 -2 degrees above normal with weakness, dizziness, nausea, syncope, profuse sweating, tachycardia
<u>Heat Stroke</u>
– Temperature of 105 degrees F or greater and any of the following: AMS, Seizure activity, lack of sweating, cardiac arrest |
|--|---|
-

First Responder and EMT Basic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ External Cooling ▪ Trendelenburg | Remove patient's clothing
Apply cold packs to axillary and groin regions
Avoid excessive cooling |
|--|--|
-

EMT Intermediate:

- Vascular Access
 - Fluid Bolus
 - Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min
-

Paramedic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Promethazine 12.5 mg IV/IO/IM for N/V <ul style="list-style-type: none"> – May be repeated x 1 if N/V persists after 15 minutes | For persistent shivering or active seizures, refer to Seizure protocol |
|---|--|
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**
-

	TAMU EMRC-EMS	INSECT / ANIMAL / SNAKE BITE	
	Standard Delegated Orders – Adult Environmental	AE 04	Page 142
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
Preceding event
- **Physical Findings:**
 - Pain to location of bite/sting
 - Known or suspected envenomation by an insect or snake

Assessment:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Environmental Assessment | <p>For snake bites to an extremity, keep the patient supine and immobilize the limb in a straight position with a splint and keep the limb at the level of the heart. Placing bends in the immobilized limb (such as a 90 degree bend at the elbow) can allow toxins to accumulate and cause extensive necrosis.</p> <p>Do not apply ice, cold pack or tourniquet or constricting band.</p> |
|--|---|

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
- Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min

Paramedic:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Pain Management ▪ Promethazine 12.5 mg IV/IO/IM for N/V <ul style="list-style-type: none"> – May be repeated x 1 if N/V persists after 15 minutes ▪ Consider Diphenhydramine 25 – 50 mg IV/IM/IO if antihistamine therapy appears to be indicated | <p>For active seizures, refer to Seizure protocol</p> <p>For allergic reaction, refer to Allergic Reaction protocol</p> |
|---|---|

Consult:

- Additional Pain Management

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**
-

	TAMU EMRC-EMS	NEAR DROWNING	
	Standard Delegated Orders – Adult Environmental	AE 05	Page 143
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Water submersion without cardiopulmonary arrest and without evidence of hypothermia
 - **Physical Findings:**
 - Dyspnea, difficulty breathing
-

Assessment:

- Environmental Assessment
-

First Responder:

- Remove from water
 - O₂ via most appropriate method
 - External warming if indicated
-

EMT Basic:

- CPAP 3 – 10 cmH₂O
-

EMT Intermediate:

- Intubate
 - If unconscious and unable to protect airway
- Vascular Access
- PEEP usage during ventilations 5 – 10 cm H₂O
- Tracheal suctioning via ETT

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

PEEP:

Use with caution in low perfusion state

Paramedic:

- Consider PAI

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol
-

	TAMU EMRC-EMS	TOXICOLOGICAL / HAZMAT	
	Standard Delegated Orders – Adult Environmental	AE 06	Page 144
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Determine type of exposure & refer to USDOT-ERG for initial assessment and management ▪ Physical Findings: – Findings will vary based upon contaminant ▪ If Organophosphates (OGP's) – SLUDGE-BM ▪ Salivation, Lacrimation (Tearing), Urination, Diarrhea/Defecation, GI Distress, Emesis, Bradycardia, & Miosis (Pinpoint pupils)	Hazardous Materials may fall under the following categories: ▪ Chemical ▪ Biological ▪ Nuclear ▪ Radioactive ▪ Explosive Most common OGP's are pesticides and produce an exaggerated parasympathetic response.
--	--

Assessment:

▪ Ensure that the patient has been decontaminated ▪ At NO TIME SHOULD EMS personnel enter the HOT or WARM Zone, unless wearing appropriate PPE. ▪ If exposure is localized and not generalize: – <i>Dry Chemical:</i> Brush the chemical off and flush with copious amounts of water. – <i>Wet Chemical:</i> Irrigate with copious amounts of water.	Medical Care should be coordinated with a Hazardous Materials Response Team Appropriate PPE may be either Level B partially encapsulated suits with PAPR (Positive Air Purifying Respirators) or Level A Fully encapsulated suits with SCBA. Water should be from a steady stream, for at least 15 – 20 minutes into a sanitary sewer
--	--

First Responder and EMT Basic:

▪ Assure scene and personal safety ▪ Assure that patient has been decontaminated appropriately ▪ Provide for oxygenation and ensure patent airway	
---	--

EMT Intermediate:

▪ Vascular Access	
---	--

Paramedic:

▪ Evaluate ECG as appropriate ▪ For OGP, administer Atropine 2 mg repeated frequently until Bradycardia has resolved ▪ Consider need for PAI	Doses in excess of 5 – 10 mg may be required to resolve Bradycardia in OGP.
--	--

Consult:

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol	
--	--

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ADULT MEDICAL



	TAMU EMRC-EMS	MEDICAL ASSESSMENT	
	Standard Delegated Orders – Adult Medical	AM 01	Page 147
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent events
 - PMHx
- **Physical Findings:**
 - Pain
 - Non-traumatic hemorrhage
 - Itching, swelling, hives
 - Altered mental status
 - Fever
 - Headache
 - Dyspnea

Assessment:

- C.A.B.C.
- Secondary Assessment
- Vital signs
- ECG 3-Lead and 12-Lead if appropriate
- Blood Glucose
- Temperature
- Lung sounds
- GCS
- OPQRST
- ASPN
- SAMPLE

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

- **Refer to appropriate protocol for treatment based on assessments**
 - **Any changes in patient condition, refer to appropriate protocol**
-

	TAMU EMRC-EMS	ALLERGIC REACTION	
	Standard Delegated Orders – Adult Medical	AM 02	Page 148
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Previous history
 - Exposure to allergen
- **Physical Findings:**
 - Mild Reaction – contact dermatitis (rash) and/or urticaria (hives), dermal itching
 - Moderate Reaction – mild reaction symptoms with dyspnea
 - Anaphylaxis – severe reaction symptoms with hypotension, difficulty swallowing, generalized edema, stridor

Assessment:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Medical Assessment | Patients should not receive more than 50 mg Diphenhydramine between both IV/IM and PO routes. |
|--|---|

First Responder:

- O₂ via most appropriate method

Mild:

- Diphenhydramine 25 – 50 mg PO

Moderate:

- “Mild reaction” treatment in addition to:
- Albuterol 2.5 mg/3 ml via Nebulizer
 - May repeat x 2 q 15 minutes

Anaphylaxis:

- “Moderate reaction” treatment in addition to:
- Epi-Pen administration in lateral thigh

EMT Basic:

- Same as above

Anaphylaxis:

- May give 0.3 mg Epinephrine 1:1,000 IM in place of Epi-Pen administration for Anaphylaxis

EMT Intermediate:

- Vascular Access
 - Fluid Bolus
-

	TAMU EMRC-EMS	ALLERGIC REACTION	
	Standard Delegated Orders – Adult Medical	AM 02	Page 149
<u>TOC</u>			

Paramedic:

Mild:

- Diphenhydramine 50 mg IV/IM/IO

Moderate:

- “Mild reaction” treatment in addition to:
- Albuterol 2.5 mg/3 ml via Nebulizer
 - May repeat x 2 q 15 minutes
- Methylprednisolone 125 mg IV/IO
- Epinephrine 1:1,000 0.3 mg IM

Anaphylaxis:

- “Moderate reaction” treatment in addition to:
- Epinephrine 1:10,000 0.5 – 1 mg IV/IO
 - If patient is unconscious with vascular collapse
- Consider PAI
- Epinephrine 1:1,000 0.5 mg SL
 - If pt is unconscious with vascular collapse

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible

Class II: soft palate, fauces and uvula visible

Class III: soft palate, base of uvula visible

Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

- Additional Epinephrine 1:10,000 0.5 – 1 mg IV/IO
 - If pt is unconscious with vascular collapse

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**

	TAMU EMRC-EMS	AMS / UNCONSCIOUS	
	Standard Delegated Orders – Adult Medical	AM 03	Page 150
<u>TOC</u>			

Criteria and History:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Medical etiology ▪ Physical Findings: <ul style="list-style-type: none"> – Unresponsive, disoriented WITHOUT a clear mechanism for Altered Mental Status (AMS) | Consider causes: <ul style="list-style-type: none"> – CVA – Hypoglycemia/hyperglycemia – Drug/Alcohol use – Recent trauma – Hepatic disease – Acidosis/electrolyte imbalance – Sepsis – Hypotension – Hypoxemia |
|---|---|

Assessment:

- Medical Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Vascular Access ▪ Naloxone 2 – 8 mg IV/IO/IN for respiratory depression ▪ Intubate if needed | <ul style="list-style-type: none"> – Do not administer Naloxone if pt is intubated |
|--|---|

Paramedic:

- Consider PAI

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
Class II: soft palate, fauces and uvula visible
Class III: soft palate, base of uvula visible
Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- Any changes in patient condition, refer to appropriate protocol

	TAMU EMRC-EMS	CEREBROVASCULAR ACCIDENT	
	Standard Delegated Orders – Adult Medical	AM 04	Page 151
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Time of onset
 - **Physical Findings:**
 - AMS
 - B/P > 200 mmHg and/or diastolic > 110 mmHg
 - Unilateral weakness
 - Paralysis
 - Facial drooping
 - Ataxia
 - Aphasia/dysphasia
 - Headache
 - Visual disturbance
-

Assessment:

- Medical Assessment
- Neurological Exam using TAMU Prehospital Stroke Scale

**TAMU Prehospital
Stroke Assessment Scale**

Facial Droop

- Both sides of the face move equally
- One side of the face does not move at all

Arm Drift

- Both arms move equally or not at all
- One arm drifts compared to the other

Speech

- Patient uses correct words with no slurring
- Slurred or inappropriate words or mute

Ataxia

- Finger to nose
 - Heel to shin
-

First Responder and EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ For Systolic B/P > 200 mmHg and/or Diastolic > 110 mmHg reassess B/P ▪ Rapid transport to appropriate facility supine with head of stretcher at 15 degrees ▪ Contact receiving facility and report pt status | <ul style="list-style-type: none"> ▪ Known onset < 120 minutes, patient eligible for acute stroke intervention at appropriate facility <ul style="list-style-type: none"> – College Station Medical Center – St. Joseph's Regional Health Center ▪ Known onset 2 – 7 hours, patient eligible for acute stroke intervention at appropriate facility <ul style="list-style-type: none"> – St. Joseph's Regional Health Center – Methodist – Main (Houston) – Scott & White – Temple ▪ Consider Air Medical Provider (AMP) |
|---|--|
-

EMT Intermediate:

- Vascular Access
 - Secondary Vascular Access
 - Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min
-

	TAMU EMRC-EMS	CEREBROVASCULAR ACCIDENT	
	Standard Delegated Orders – Adult Medical	AM 04	Page 152
TOC			

Paramedic:

- Promethazine 12.5 mg IV/IO/IM
 - May be repeated x 1 if N/V persists after 15 minutes
- Labetalol 10 mg over 2 minutes IV/IO q 15 minutes if B/P remains > 160/110
- Consider PAI

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- Any changes in patient condition, refer to appropriate protocol

	TAMU EMRC-EMS	DIABETIC - HYPERGLYCEMIA	
	Standard Delegated Orders – Adult Medical	AM 05 - A	Page 153
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Known history
 - New onset
 - **Physical Findings:**
 - BGL > 180 mg/dL with one of the following:
 - AMS, tachypnea, abdominal pain, hypotension and tachycardia
 - Polyuria, Polyphagia, Polydipsia
-

Assessment:

- Medical Assessment
-

First Responder and EMT Basic:

- O₂ via most appropriate method
-

EMT Intermediate:

- Vascular Access
 - Obtain blood sample for lab analysis
 - Fluid Bolus
 - Continued infusion of NS 500 ml/hr
 - Discontinue if pulmonary edema develops
 - Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min
-

Paramedic:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Promethazine 12.5 mg IV/IO/IM for N/V <ul style="list-style-type: none"> – May be repeated x 1 if N/V persists after 15 minutes ▪ Sodium Bicarbonate 1 mEq/kg IV <ul style="list-style-type: none"> – If metabolic acidosis is suspected | Consider Sodium Bicarbonate when pt is tachycardic, tachypneic, altered mental status |
|---|---|
-

Consult:

- Additional Sodium Bicarbonate
-

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	DIABETIC - HYPOGLYCEMIA	
	Standard Delegated Orders – Adult Medical	AM 05 - B	Page 154
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Known history
 - New onset
 - **Physical Findings:**
 - BGL < 80 mg/dL
 - Signs and symptoms suggestive of Hypoglycemia: AMS, tremors, weakness, N/V, intense hunger, diaphoresis
 - BGL < 40 mg/dL should be treated, regardless of presence of other signs/symptoms
-

Assessment:

- Medical Assessment
-

First Responder and EMT Basic:

- O₂ via most appropriate method
 - Oral glucose 40% 15 g PO
 - Only in patients with intact gag reflex and able to follow commands to swallow medication
-

EMT Intermediate:

- Vascular Access
 - Thiamine 50 mg IV/IO and 50 mg IM
 - Prior to D50% administration
 - D50% 25 – 50 g IV
 - May be repeated x 1 q 5 if symptoms persist
 - Repeat BGL in 10 minutes after administration of D50%
-

Paramedic:

- Glucagon 1 mg IM/SQ if unable to obtain vascular access
 - Should be followed by Oral glucose once patient can follow commands and swallow
 - Additional D50% 25 – 50 g IV
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	DYSTONIC REACTION	
	Standard Delegated Orders – Adult Medical	AM 06	Page 155
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Recent ingestion of phenothiazines, fluphenazines, other neuroleptics or related drugs used as antipsychotics and can also be used to treat GI disorders and nausea ▪ Physical Findings: – Protrusion of the tongue, twisted neck or facial spasms, roving or deviated gaze, abdominal rigidity or pain, spasm of the entire body, twitching	Promethazine Reglan (Metoclopramide) Propulsid Haldol
--	--

Assessment:

▪ Medical Assessment	Patients should not receive more than 50 mg Diphenhydramine between both IV/IM and PO routes.
--	---

First Responder and EMT Basic:

▪ O₂ via most appropriate method ▪ Diphenhydramine 25 – 50 mg PO if patient is able to follow commands and swallow without risk of aspiration.
--

EMT Intermediate:

▪ Vascular Access

Paramedic:

▪ Diphenhydramine 50 mg IV/IM/IO ▪ Midazolam 2 – 5 mg IV/IM/IO/IN if no response is seen from Diphenhydramine
--

Consult:

▪ Additional Midazolam 2 – 5 mg IV/IM/IO
--

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol

	TAMU EMRC-EMS	FEVER	
	Standard Delegated Orders – Adult Medical	AM 07	Page 156
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Evidence of determinable source for sepsis ▪ Physical Findings: – AMS – Weakness – Temperature > 101 degrees F	– Use of full PPE is recommended
---	--

Assessment:

▪ Medical Assessment
--

First Responder and EMT Basic:

▪ O₂ via most appropriate method ▪ External cooling ▪ Acetaminophen 975 mg PO if no N/V (or 15 mg/kg)	Refer to Heat Related Emergency protocol
--	--

EMT Intermediate:

▪ Vascular Access ▪ Fluid Bolus
--

Paramedic:

▪ Same as above	For persistent shivering or active seizures, refer to Seizure protocol
---	--

Consult:

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol
--

	TAMU EMRC-EMS	HYPERTENSIVE CRISIS	
	Standard Delegated Orders – Adult Medical	AM 08	Page 157
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Systolic B/P > 200 mmHg and/or Diastolic B/P > 110 mmHg
 - Evidence of end-organ dysfunction including:
 - Chest pain
 - Dyspnea
 - Severe headache
 - Nausea/Vomiting
 - Epistaxis

Assessment:

- Medical Assessment
- Neurological Exam using TAMU Prehospital Stroke Scale

First Responder and EMT Basic:

- O₂ via most appropriate method
- For Systolic B/P > 200 mmHg and/or Diastolic B/P > 110 mmHg reassess B/P

EMT Intermediate:

- Vascular Access
- Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min

Paramedic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ If pt has NO clinical evidence of end organ dysfunction, transport with supportive treatment ▪ Promethazine 12.5 mg IV/IO/IM <ul style="list-style-type: none"> – May be repeated x 1 if N/V persists after 15 minutes ▪ Labetalol 10 mg over 2 minutes IV q 15 minutes if B/P remains > 160/110 | Chest Pain, Abdominal Pain, Shortness of Breath, and CVA – Refer to appropriate protocol |
|---|--|

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	MALNUTRITION / DEHYDRATION	
	Standard Delegated Orders – Adult Medical	AM 09	Page 158
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Recent illness – Poor nutrition – Anorexia – ETOH abuse ▪ Physical Findings: – Poor skin turgor – Dizziness	Compensated Hypovolemia – Normotension and tachycardia Uncompensated Hypovolemia – Hypotension and tachycardia
---	--

Assessment:

▪ Medical Assessment	Contact information for APS: 1-800-252-5400 or https://www.txabusehotline.org
--	--

First Responder and EMT Basic:

▪ O₂ via most appropriate method

EMT Intermediate:

▪ Vascular Access ▪ Fluid Bolus – q 5 – 10 minutes if pt is symptomatic and there is no evidence of pulmonary edema ▪ Thiamine 50 mg IV/IO and 50 mg IM ▪ Zofran 8 mg oral disintegrating tablet (ODT) PO – May be repeated every 15 min

Paramedic:

▪ Promethazine 12.5 mg IV/IO/IM for N/V – May be repeated x 1 if N/V persists after 15 minutes ▪ Thiamine 50 mg IV/IO and 50 mg IM (not to exceed 100 mg total dose)
--

Consult:

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol
--

	TAMU EMRC-EMS	NON-TRAUMATIC ABDOMINAL PAIN	
	Standard Delegated Orders – Adult Medical	AM 10	Page 159
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Medical etiology ▪ Physical Findings: – Abdominal pain with rebound tenderness, increased pain on palpation, increased pain on movement – Symptoms of Renal calculi	– Females of reproductive age who complain of abdominal pain are managed with the OB Abdominal Pain protocol – Abdominal pain secondary to trauma is managed with the Multi-System trauma protocol
--	---

Assessment:

▪ Medical Assessment ▪ Auscultation of bowel sounds and history of bowel movement ▪ Gently palpate for pulsating masses

First Responder and EMT Basic:

▪ O₂ via most appropriate method

EMT Intermediate:

▪ Vascular Access ▪ Zofran 8 mg oral disintegrating tablet (ODT) PO – May be repeated every 15 min
--

Paramedic:

▪ Promethazine 12.5 mg IV/IO/IM – For N/V – May be repeated x 1 if N/V persists after 15 minutes ▪ Pain Management	Patients who experience abdominal pain secondary to trauma are NOT candidates for pain medications.
---	---

Consult:

▪ Additional Pain Management
--

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol
--

	TAMU EMRC-EMS	NON-TRAUMATIC HEMORRHAGE	
	Standard Delegated Orders – Adult Medical	AM 11	Page 160
<u>TOC</u>			

Criteria and History:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Medical etiology ▪ Physical Findings: <ul style="list-style-type: none"> – Hypovolemia secondary to blood loss due to medical etiology – “Coffee grounds” emesis – Blood in stool – Epistaxis | Consider all possible causes <ul style="list-style-type: none"> – Abdominal aortic aneurysm (AAA) – Ulcers/Diverticulitis/GI bleed |
|---|--|

Assessment:

- Medical Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Consider Trendelenburg

EMT Intermediate:

- Vascular Access
- Fluid Bolus x 2 q 5 minutes
 - Discontinue if pulmonary edema develops
- Secondary Vascular Access

Paramedic:

- Same as above

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol
-

	TAMU EMRC-EMS	NON-TRAUMATIC SHOCK / HYPOTENSION	
	Standard Delegated Orders – Adult Medical	AM 12	Page 161
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – No evidence of blood loss or trauma ▪ Physical Findings: – Systolic B/P < 90 mmHg – AMS – Sepsis – Tachycardia	Evidence of sepsis can include any of the following: ▪ Fever ▪ Recent wound or surgery ▪ Recent URI/UTI symptoms ▪ Urinary catheter ▪ Petechia or rash
--	--

Assessment:

▪ Medical Assessment
--

First Responder and EMT Basic:

▪ O₂ via most appropriate method ▪ Consider Trendelenburg

EMT Intermediate:

▪ Vascular Access ▪ Fluid Bolus x 2 q 5 minutes – Discontinue if pulmonary edema develops ▪ Secondary Vascular Access
--

Paramedic:

▪ Dopamine Infusion 5 – 20 mcg/kg/min – Administer if patient remains hypotensive 5 minutes after fluid bolus ▪ Consider PAI	Dopamine Chart (gtts/min) (400mg/250 ml Normal Saline)							
	KGS	40	50	60	70	80	90	100
	MCG/MIN							
	5	8	10	12	13	15	17	19
	10	15	19	22	26	30	33	37
	15	22	28	33	39	44	50	56
	20	30	37	44	52	59	67	74
	25	37	46	56	65	74	82	93

Consult:

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol

	TAMU EMRC-EMS	OVERDOSE / POISONING	
	Standard Delegated Orders – Adult Medical	AM 13	Page 162
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Known use of drugs or alcohol
 - Known or suspected ingestion or injection of pharmacologically active substance, whether intentional or accidental
 - Ingestion, inhalation or absorption of potentially harmful non-pharmaceutical substance
- **Physical Findings:**
 - Lethargy, AMS, combative, unresponsive

Assessment:

- | | |
|----------------------|---------------------------------------|
| ▪ Medical Assessment | Poison Control: 1-800-222-1222 |
|----------------------|---------------------------------------|

First Responder and EMT Basic:

- | | |
|---|--|
| ▪ O ₂ via most appropriate method
▪ Consider contacting Poison Control | 100% O ₂ for Carbon monoxide
Consider Hyperbaric Therapy |
|---|--|

EMT Intermediate:

- | | |
|---|---|
| ▪ Vascular Access
▪ Naloxone 2 – 8 mg IV/IO/IN <ul style="list-style-type: none"> – May repeat – For suspected narcotic overdose with respiratory depression ▪ Charcoal 50 – 100 grams PO within 1 hour of ingestion | ▪ Contact Poison Control for information related to signs and symptoms of a particular overdose as well as recommended treatment modalities.

▪ Activated charcoal is not indicated in overdoses involving alkalis, strong acids, petroleum products or alcohols. |
|---|---|

Paramedic:

- | | |
|--|---|
| ▪ Sodium Bicarbonate 0.5 – 1 mEq/kg IV/IO <ul style="list-style-type: none"> – For Tricyclic anti-depressant (TCA) overdose with AMS and tachycardia and/or widened QRS complexes – For ethylene glycol ingestion (antifreeze, detergents, paints) ▪ Atropine 2 mg IV/IM/IO <ul style="list-style-type: none"> – For OGP poisoning with parasympathetic symptoms – Repeat q 5 as needed ▪ Glucagon 1 mg IV/IM/SQ/IO <ul style="list-style-type: none"> – Beta blocker or calcium channel blocker overdose ▪ #18 fr Nasogastric tube placement <ul style="list-style-type: none"> – If necessary for evacuation of gastric contents or to facilitate administration of Charcoal | Tricyclic Antidepressants include: <ul style="list-style-type: none"> – Elavil – Amitriptyline – Imipramine – Doxepin – Nortriptyline Calcium Channel Blockers include: <ul style="list-style-type: none"> – Amlodipine – Diltiazem – Nifedipine – Verapamil Beta Blockers include: <ul style="list-style-type: none"> – Atenolol – Metoprolol – Propranolol – Corgard – Inderal – Lopressor – Tenormin – Trandate |
|--|---|

	TAMU EMRC-EMS	OVERDOSE / POISONING	
	Standard Delegated Orders – Adult Medical	AM 13	Page 163
<u>TOC</u>			

▪ Midazolam 2 – 5 mg IV OR ▪ Diazepam 5 – 10 mg IV – For cocaine or methamphetamine overdose ▪ PAI	
--	--

Consult:

▪ Additional Midazolam or Diazepam
--

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol
--

	TAMU EMRC-EMS	SEIZURES	
	Standard Delegated Orders – Adult Medical	AM 14	Page 164
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of seizures
 - Head trauma
 - New onset
 - **Physical Findings:**
 - *Post-ictal*
Witnessed, reported or suspected seizure prior to EMS arrival
 - *Active*
Actively seizing patient upon EMS arrival
-

Assessment:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Medical Assessment | Consider possible causes: <ul style="list-style-type: none"> – Head trauma – Febrile – Epilepsy – Overdose – Withdrawals – Hypoglycemia – Unknown etiology |
|--|---|
-

First Responder and EMT Basic:

- O₂ via most appropriate method
 - External cooling, if febrile
 - Protect patient from potential hazards and objects in case of active seizure
-

EMT Intermediate:

- Vascular Access
-

Paramedic:

- Active
- Midazolam 2 – 5 mg IV/IM/IO/IN
 - Repeat x 1, Midazolam 2 – 5 mg IV/IM/IO q 5 min
- OR**
- Diazepam 2 – 10 mg IV/IO
 - Diazepam 4 – 20 mg PR
 - If unable to establish IV
-

Consult:

- Additional Midazolam 2 – 5 mg IV/IM/IO/IN
 - Additional Diazepam 2 – 10 mg IV/IO
 - Additional Diazepam 4 – 20 mg PR if unable to establish IV
-

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	SYNCOPE	
	Standard Delegated Orders – Adult Medical	AM 15	Page 165
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of loss of consciousness
 - **Physical Findings:**
 - Common “faint” (vasovagal syncope)
 - Postural “faint” (orthostatic syncope)
 - Hyperventilation syncope
 - **ECG Findings:**
 - No evidence of cardiac ischemia
-

Assessment:

- Medical Assessment
 - Orthostatic Vital Signs
-

First Responder and EMT Basic:

- O₂ via most appropriate method
 - Once you have completed a patient assessment, and a cause of syncope has been determined, refer to the appropriate protocol
-

EMT Intermediate:

- Vascular Access
-

Paramedic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Same as above | Syncope is arrhythmia related until proven otherwise.
Maintain high index of suspicion. |
|---|--|
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

ADULT RESPIRATORY



	TAMU EMRC-EMS	RESPIRATORY ASSESSMENT	
	Standard Delegated Orders – Adult Respiratory	AR 01	Page 167
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Use of inhaled medications, steroids, diuretics, anti-hypertensive medications – Smoking – Fever – Productive cough – Recent surgery ▪ Physical Findings: – Dyspnea, tachypnea – Cyanosis – Clubbing – Edema (Pulmonary, pedal, ascites, presacral) – Wheezing, rales, rhonchi, absent/decreased breath sounds, stridor – Chest pain – Bronchoconstriction – Jugular venous distention (JVD)	Consider all possible cases and refer to appropriate protocol: – Pulmonary Embolism – Anxiety – COPD – Asthma – Airway obstruction – Pneumonia – CHF – Pneumothorax – Allergic reaction – Aspiration
---	--

Assessment:

▪ C.A.B.C. ▪ Secondary Assessment ▪ Vital Signs (orthostatic) ▪ ECG 3-Lead and 12-Lead if appropriate ▪ Blood glucose ▪ Temperature ▪ Lung sounds ▪ GCS ▪ OPQRST ▪ ASPN ▪ SAMPLE ▪ Capnography ▪ Mallampati score	<u>Mallampati Classification</u> Class I: soft palate, fauces, uvula, pillars visible Class II: soft palate, fauces and uvula visible Class III: soft palate, base of uvula visible Class IV: soft palate not visible
---	---

Critical Points:

▪ Refer to appropriate protocol for treatment based on assessments ▪ Any changes in patient condition, refer to appropriate protocol

	TAMU EMRC-EMS	RESPIRATORY ASSESSMENT	
	Standard Delegated Orders – Adult Respiratory	AR 01	Page 168
TOC			

	Breath Sounds	Effort	Edema	Cough	Onset	History	Patient's Medications	SPO2	EtCO2	JVD	Vitals
CHF	Rales, possible wheezing	Labored	Maybe	Clear, white or blood tinged sputum	Sudden	HTN, Cardiac, CHF	K-Dur, Lasix, Lanoxin	↓	↑	Maybe	Irregular HR (a-fib), ↑BP
COPD	Wheezing, could be silent	Barrel-chested, tripod	No	Productive, Sputum	Chronic	COPD	Bronchodilators, Steroids	↓	↑		
Asthma	Wheezing, could be silent	Grunting, retractions, gasping	No	Productive, Sputum	Acute	Asthma	Bronchodilators, Steroids	↑early ↓late		No	
Pneumonia	Rales, possible wheezing, congestion	Pleuritic pain		Productive, Yellow green	Over several days	General sickness, fatigue, fever	Various			No	
Pulmonary Embolus	Crackles, wheezes?	Pleuritic pain	Maybe	Maybe	Sudden	Recent surgery, bed ridden		↓	↓	Maybe	↓BP ↑HR
Allergic Reactions	Wheezing	Stridor, Shallow	Maybe	Maybe	Sudden	New medication, insect sting/bite		↓			↓BP ↑HR
Hyperventilation	Clear	Carpopedal spasms, chest pain			Sudden	No significant medical history		↑	↓		
Cardiac Event	Possible wheezes					Cardiac, Bypass surgery, possibly none					
Mass (tumor, FBAO, etc.)	Unilateral										

	TAMU EMRC-EMS	AIRWAY OBSTRUCTION	
	Standard Delegated Orders – Adult Respiratory	AR 02	Page 169
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent event
- **Physical Findings:**
 - Partial or complete airway obstruction
 - Secondary to foreign body aspiration
 - Decreased LOC
 - Cyanosis
 - Obvious inadequate air exchange

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- Abdominal/chest thrusts
 - If patient is conscious
- O₂ via most appropriate method

EMT Intermediate:

- Direct laryngoscopy and removal of foreign object with Magill forceps or suction
 - If patient is unconscious and there is a complete obstruction
- Vascular Access

Paramedic:

- Consider surgical airway if obstruction is not relieved by other means

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	BRONCHOSPASM	
	Standard Delegated Orders – Adult Respiratory	AR 03	Page 170
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of asthma
- **Physical Findings:**
 - Dyspnea with wheezing or prolonged expiratory phase

Assessment:

- Respiratory Assessment

First Responder:

- O₂ via most appropriate method
- Albuterol 2.5 mg/3 ml via Nebulizer
 - May repeat x 2 q 15 minutes

EMT Basic:

- Same as above
- CPAP 3 – 8 cmH₂O

EMT Intermediate:

- Vascular Access
- Fluid Bolus

Paramedic:

- Methylprednisolone 125 mg IV/IO
- Epinephrine 1:1,000 0.3 mg SQ
- Consider PAI
- Magnesium Sulfate 1 g IV/IO infusion
 - May be repeated x 1

Magnesium Sulfate Infusion

Mix 1 g in 100 ml NS and infuse over 10 minutes

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

- Additional Epinephrine 1:1,000 0.3 mg SQ

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	CHRONIC OBSTRUCTED PULMONARY DISEASE	
	Standard Delegated Orders – Adult Respiratory	AR 04	Page 171
TOC			

Criteria and History:

▪ Historical Findings: – History of COPD – Chronic bronchitis or emphysema ▪ Physical Findings: – Abnormal breath sounds	COPD – Chronic Obstructed Pulmonary Disease
--	---

Assessment:

▪ Respiratory Assessment
--

First Responder:

▪ O₂ via most appropriate method ▪ Albuterol 2.5 mg/3 ml via Nebulizer – May repeat x 2 q 15 minutes

EMT Basic:

▪ Same as above ▪ CPAP 3 – 10 cmH₂O

EMT Intermediate:

▪ Vascular Access ▪ Fluid Bolus
--

Paramedic:

▪ Methylprednisolone 125 mg IV/IO ▪ Consider PAI	<u>Mallampati Classification</u> Class I: soft palate, fauces, uvula, pillars visible Class II: soft palate, fauces and uvula visible Class III: soft palate, base of uvula visible Class IV: soft palate not visible <u>ET Tube Confirmation</u> – Confirm with 5 methods as per procedure <u>Capnometry Reference:</u> – EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg
---	---

Consult:

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol

	TAMU EMRC-EMS	HYPERVENTILATION	
	Standard Delegated Orders – Adult Respiratory	AR 05	Page 172
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Stress or anxiety
- **Physical Findings:**
 - Increased rate/depth of respiration without evidence of hypoxemia
 - Facial/peripheral tingling
 - Extremity cramping or carpopedal spasm
 - Dizziness
- **ECG Findings:**
 - Tachycardia

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Psychological support

EMT Intermediate:

- Vascular Access

Paramedic:

- Midazolam 2 – 5 mg IV/IM/IO/IN
 - For extreme anxiety

If unable to control hyperventilation within 10 minutes, consider sedation and see adult behavioral protocol

Consult:

- Additional Midazolam 2 – 5 mg IV/IM/IO/IN
 - For extreme anxiety

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	PNEUMONIA	
	Standard Delegated Orders – Adult Respiratory	AR 06	Page 173
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent upper respiratory illness
- **Physical Findings:**
 - Fever
 - Productive cough
 - Wheezing, rhonchi or rales

Assessment:

- Respiratory Assessment

First Responder:

- O₂ via most appropriate method
- Albuterol 2.5 mg/3 ml via Nebulizer
 - May repeat x 2 q 15 minutes
- Acetaminophen 975 mg PO (or 15 mg/kg)

EMT Basic:

- Same as above
- CPAP 3 – 10 cmH₂O

EMT Intermediate:

- Vascular Access
- Fluid Bolus

Paramedic:

- Consider PAI

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	PULMONARY EMBOLISM	
	Standard Delegated Orders – Adult Respiratory	AR 07	Page 174
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent surgery
 - Thrombosis/Embolism
 - Recent travel
- **Physical Findings:**
 - Dyspnea, sudden onset
 - Leg pain / swelling
 - Chest pain
 - Hemoptysis
 - JVD
- **ECG Findings:**
 - A-fib
 - Tachycardia

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Place patient in left lateral recumbent position
- Rapid Transport

EMT Intermediate:

- Vascular Access
- Fluid Bolus if B/P < 90 mmHg
- Intubate
 - If patient is in severe distress or unable to protect airway

Paramedic:

- Consider PAI
- Dopamine Infusion 5 – 20 mcg/kg/min
 - Administer if patient remains hypotensive 5 minutes after fluid bolus

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

	TAMU EMRC-EMS	PULMONARY EMBOLISM	
	Standard Delegated Orders – Adult Respiratory	AR 07	Page 175
<u>TOC</u>			

	Dopamine Chart (gtts/min) (400mg/250 ml Normal Saline)							
	KGS	40	50	60	70	80	90	100
	MCG/MIN							
	5	8	10	12	13	15	17	19
	10	15	19	22	26	30	33	37
	15	22	28	33	39	44	50	56
	20	30	37	44	52	59	67	74
	25	37	46	56	65	74	82	93

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol

	TAMU EMRC-EMS	RESPIRATORY DISTRESS	
	Standard Delegated Orders – Adult Respiratory	AR 08	Page 176
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Significant respiratory history
 - New onset
- **Physical Findings:**
 - Dyspnea without a clear etiology
 - Abnormal breath sounds

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Albuterol 2.5 mg/3 ml via Nebulizer

If no beneficial response is seen with Albuterol, consider other causes and treatment.

EMT Intermediate:

- Vascular Access

Paramedic:

- Additional Albuterol 2.5 mg / 3 ml via nebulizer
- Consider PAI

If no beneficial response is seen with Albuterol, consider other causes and treatment.

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
Class II: soft palate, fauces and uvula visible
Class III: soft palate, base of uvula visible
Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

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OBSTETRICAL



	TAMU EMRC-EMS	OB ASSESSMENT	
	Standard Delegated Orders – Adult Obstetrical	OB 01	Page 179
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Pregnancy, spontaneous abortion
- **Physical Findings:**
 - Abdominal pain
 - Abnormal vaginal hemorrhage

Assessment:

- C.A.B.C.
- Secondary Assessment
- Vital Signs
- ECG 3-Lead and 12-Lead if appropriate
- Blood glucose
- Temperature
- Lung sounds
- GCS
- OPQRST
- ASPN
- SAMPLE
- Physical exam including palpation of all abdominal regions
- Determination of para and gravida and estimated date of confinement
- Check for Vaginal discharge / hemorrhage / crowning limbs

Critical Points:

- **Refer to appropriate protocol for treatment based on assessments**
 - **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	ABDOMINAL PAIN - FEMALE	
	Standard Delegated Orders – Adult Obstetrical	OB 02	Page 180
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Any female of child-bearing age complaining of abdominal pain without evidence of labor or trauma

Assessment:

- OB Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
- Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min

Paramedic:

- Promethazine 12.5 mg IV/IO/IM
 - May repeat x 1 if nausea/vomiting persists after 15 minutes
- Pain Management

Consult:

- Additional Pain Management

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	PRE-ECLAMPSIA / TOXEMIA	
	Standard Delegated Orders – Adult Obstetrical	OB 03	Page 181
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Gravid female with intra-uterine pregnancy with greater than 20 weeks gestation
- **Physical Findings:**
 - Persistent hypertension with systolic of 140 and/or diastolic of 90 or greater
 - One or more of:
 - Peripheral edema
 - Nausea/vomiting
 - Headache

Assessment:

- OB Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Place patient in left lateral recumbent position

Outside sensory stimulation should be MINIMAL

EMT Intermediate:

- Vascular Access
- Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min

Paramedic:

- Promethazine 12.5 mg IV/IO/IM
 - May repeat x 1 if nausea/vomiting persists after 15 minutes
- Magnesium sulfate 1 g infusion
 - May be repeated x 1
- Labetalol 10 mg SLOW IV/IO
 - If hypertension persists refractory to Magnesium sulfate

Magnesium sulfate

Mix 1 g in 100 ml NS and infuse over 10 minutes

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	ECLAMPSIA / TOXEMIA	
	Standard Delegated Orders – Adult Obstetrical	OB 04	Page 182
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Gravid female with intra-uterine pregnancy with greater than 20 weeks gestation
- **Physical Findings:**
 - Active seizures
 - Persistent hypertension with systolic of 140 and/or diastolic of 90 or greater
 - One or more of:
 - Peripheral edema
 - Nausea/vomiting
 - Headache

Assessment:

- OB Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Place patient in left lateral recumbent position

EMT Intermediate:

- Vascular Access
- Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min

Paramedic:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Midazolam 2 – 5 mg IV/IO/IM/IN ▪ Magnesium sulfate 1 g infusion <ul style="list-style-type: none"> – May be repeated x 1 ▪ Promethazine 12.5 mg IV/IO/IM <ul style="list-style-type: none"> – May repeat x 1 if nausea/vomiting persists after 15 minutes ▪ Labetalol 10 mg SLOW IV/IO <ul style="list-style-type: none"> – If hypertension persists refractory to Magnesium sulfate | <p><u>Magnesium sulfate</u>
 Mix 1 g in 100 ml NS and infuse over 10 minutes</p> |
|---|---|

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	LABOR	
	Standard Delegated Orders – Adult Obstetrical	OB 05	Page 183
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Gravid female with intra-uterine pregnancy > 20 weeks
- **Physical Findings:**
 - Back and/or abdominal pain which occurs periodically, at regular intervals
 - “Bag of waters” intact or ruptured

Assessment:

- OB Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Place patient in left lateral recumbent position

EMT Intermediate:

- Vascular Access
- Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min

Paramedic:

- Promethazine 12.5 mg IV/IO/IM
 - May repeat x 1 if nausea/vomiting persists after 15 minutes

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	CHILDBIRTH / IMMINENT DELIVERY	
	Standard Delegated Orders – Adult Obstetrical	OB 06	Page 184
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Gravid female with intra-uterine pregnancy > 20 weeks
 - **Physical Findings:**
 - Presentation of a viable fetus through cervix
-

Assessment:

- OB Assessment
-

First Responder and EMT Basic:

- O₂ via most appropriate method
 - Control delivery
 - Deliver neonate
 - Refer to post-delivery care of neonate protocol
 - Fundus massage post delivery hemorrhage
-

EMT Intermediate:

- Vascular Access
-

Paramedic:

- Same as above
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	NEONATE CARE	
	Standard Delegated Orders – Adult Obstetrical	OB 07	Page 185
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Neonate less than 12 hours old
- **Physical Findings:**
 - Viable baby

Assessment:

- C.A.B.C.
- APGAR
- Vital signs
- Blood glucose; if < 40, refer to pediatric hypoglycemia protocol
- ECG

First Responder and EMT Basic:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Dry, Warm, Position, Suction and Stimulate ▪ O₂ via most appropriate method ▪ Chest compressions if heart rate < 60 | <ul style="list-style-type: none"> – BVM assist if apneic OR heart rate < 100 |
|---|---|

EMT Intermediate:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Vascular Access ▪ Naloxone 0.1 mg/kg IV/IO/IN <ul style="list-style-type: none"> – Max single dose of 2 mg – Repeat every 2 – 3 minutes | <ul style="list-style-type: none"> – Do not administer Naloxone if patient is intubated |
|---|--|

Paramedic:

- Epinephrine 0.01 mg/kg (0.1 ml/kg 1:10,000) IV/IO
 - q 3 – 5 min
- IF NO VASCULAR ACCESS, Epinephrine 0.1 mg/kg (0.1 ml/kg 1:1,000) ET
 - q 3 – 5 min

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	LIMB PRESENTATION	
	Standard Delegated Orders – Adult Obstetrical	OB 08	Page 186
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Gravid female with intrauterine pregnancy > 20 weeks
- **Physical Findings:**
 - Limb presentation at vaginal opening

Assessment:

- OB Assessment

First Responder and EMT Basic:

- RAPID TRANSPORT
- O₂ via most appropriate method
- Place patient in left lateral recumbent position

EMT Intermediate:

- Vascular Access
- Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min

Paramedic:

- Promethazine 12.5 mg IV/IO/IM
 - May repeat x 1 if nausea/vomiting persists after 15 minutes

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	PROLAPSED UMBILICAL CORD	
	Standard Delegated Orders – Adult Obstetrical	OB 09	Page 187
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Gravid female with intrauterine pregnancy > 20 weeks
 - **Physical Findings:**
 - Presentation of umbilical cord through vaginal opening
-

Assessment:

- OB Assessment
-

First Responder and EMT Basic:

- RAPID TRANSPORT
 - O₂ via most appropriate method
 - Wrap umbilical cord in moist sterile dressing
 - Insert gloved hand into vagina and move neonate's head so it does not compress umbilical cord
 - Place mother prone, in knee – to – chest position
-

EMT Intermediate:

- Vascular Access
-

Paramedic:

- Same as above
-

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol
-

	TAMU EMRC-EMS	SPONTANEOUS ABORTION	
	Standard Delegated Orders – Adult Obstetrical	OB 10	Page 188
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Known or suspected intrauterine pregnancy
- **Physical Findings:**
 - Vaginal hemorrhage that is non-menstrual
 - Abdominal or back cramping or pain
 - Tissue passing with blood

Assessment:

- OB Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Control hemorrhage
- Collect all passed tissue, if possible
- Emotional support, as needed

EMT Intermediate:

- Vascular Access

Paramedic:

- Same as above

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	VAGINAL BLEEDING	
	Standard Delegated Orders – Adult Obstetrical	OB 11	Page 189
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Gravid female with intrauterine pregnancy > 20 weeks
 - Non-pregnancy related
- **Physical Findings:**
 - Vaginal hemorrhage that is non-menstrual without:
 - Labor
 - History of trauma
 - Or evidence of spontaneous abortion

Assessment:

- OB Assessment

First Responder and EMT Basic:

- Place patient in left lateral recumbent position
- O₂ via most appropriate method
- Rapid transport

EMT Intermediate:

- Vascular Access
- Fluid Bolus, titrate to systolic pressure of 90 mmHg

Paramedic:

- Same as above

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

ADULT TRAUMA



	TAMU EMRC-EMS	TRAUMA ASSESSMENT	
	Standard Delegated Orders – Adult Trauma	AT 01	Page 191
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of recent trauma
 - MOI indicative of trauma
- **Physical Findings:**
 - Evidence of trauma

Assessment:

- C.A.B.C.
- Secondary Assessment
- Vital Signs
- ECG 3-Lead and 12-Lead if appropriate
- Blood glucose
- Temperature
- Lung sounds
- GCS
- OPQRST
- ASPN
- SAMPLE
- Trauma Score

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

- **Refer to appropriate protocol for treatment based on assessments**
 - Any changes in patient condition, refer to the appropriate protocol
 - Refer to destination criteria guidelines for appropriate facility.
-

	TAMU EMRC-EMS	AMPUTATION	
	Standard Delegated Orders – Adult Trauma	AT 02	Page 192
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
- **Physical Findings:**
 - A severed part that is completely separated from the body

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Control hemorrhage
- Splint any associated fracture or dislocation

To care for amputated part:

- Rinse with sterile water
- Place in a bag
- Keep cool but do not place directly on ice

EMT Intermediate:

- Vascular Access
- Fluid Bolus if severe blood loss has occurred
- Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min

Paramedic:

- Promethazine 12.5 mg IV/IO/IM
 - For N/V
 - May repeat x 1 if nausea/vomiting persists after 15 minutes
- Pain Management
- Consider Air Medical Provider (AMP)

Consider pressure points or tourniquet if hemorrhage cannot be controlled by direct pressure

Consider use of Air Medical Provider (AMP)

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	BURNS	
	Standard Delegated Orders – Adult Trauma	AT 03	Page 193
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
- **Physical Findings:**

Tissue injury from direct contact with:

 - Heat source
 - Chemical reaction
 - Inhalation
 - Electrical / lightning contact

Inhalation Injuries/Burns with any one of the following:

 - Singed nasal hairs or oral mucosa
 - Erythema of the palate, soot in the mouth, larynx or sputum
 - Rapid, shallow ventilation with tachypnea > 40 AND decreased mental status
 - Respiratory rate < 8
 - Mechanical airway obstruction from trauma, edema, or laryngospasm
 - Signs of respiratory distress such as nasal flaring, respiratory crowing or stridor, anxiety, agitation, or combativeness
 - Edema associated with a burn of the face or neck
 - Unconsciousness

Assessment:

- | | |
|---|----------------------------------|
| <ul style="list-style-type: none"> ▪ Trauma Assessment | Rule of Nines: refer to appendix |
|---|----------------------------------|

First Responder and EMT Basic:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Remove the burn source ▪ O₂ via most appropriate method ▪ Treat Underlying Injuries ▪ Dress burns as follows: <ul style="list-style-type: none"> – TBSA < 15% use burn gel – TBSA > 15% use dry sterile dressing or burn sheet | <ul style="list-style-type: none"> – Remove jewelry and restricting clothing – Brush off any powdered chemical – Irrigate chemical burn site with water, if appropriate to chemical – Keep the patient warm after removing burn source and possibly contaminated clothing |
|---|---|

EMT Intermediate:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Vascular Access ▪ Intubation for respiratory burns ▪ Zofran 8 mg oral disintegrating tablet (ODT) PO <ul style="list-style-type: none"> – May be repeated every 15 min | <p>Parkland Burn Formula:</p> <ul style="list-style-type: none"> – V (fluids volume)= TBSA of burn (%) x weight (kg) x 4 – Patient receives half of this volume over the first 8 hours after the burn. |
|--|---|

	TAMU EMRC-EMS	BURNS	
	Standard Delegated Orders – Adult Trauma	AT 03	Page 194
<u>TOC</u>			

Paramedic:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Pain Management ▪ Promethazine 12.5 mg IV/IO/IM ▪ May repeat x 1 if nausea/vomiting persists after 15 minutes ▪ PAI for respiratory burns ▪ CONSIDER Air Medical Provider (AMP) | <ul style="list-style-type: none"> – Do not administer MS to patients with severe respiratory burns unless airway is secured – Initial dose of MS for severe burns should be 3 – 5 mg IV – Keep the patient warm after removing burn source and possibly contaminated clothing <p><u>Mallampati Classification</u>
 Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible</p> |
|--|---|

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
 - Appropriate Destination: **UTMB or Hermann Hospital**
 - For inhalation / hands / face / genitals;
 - >30% TBSA 2nd degree and/or higher; of <12 and > 65 years of age
-

	TAMU EMRC-EMS	EVISCERATION	
	Standard Delegated Orders – Adult Trauma	AT 04	Page 195
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
 - **Physical Findings:**
 - Protrusion of internal organs through a wound
-

Assessment:

- Trauma Assessment
-

First Responder and EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Spinal motion restriction if indicated ▪ O₂ via most appropriate method ▪ Occlude wound with a sterile, moist dressing and bandage | <p>Never attempt to replace protruding organs back into the body cavity.</p> |
|---|--|
-

EMT Intermediate:

- Vascular Access
-

Paramedic:

- Pain Management
-

Consult:

- Additional Pain Management
-

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	EYE INJURY	
	Standard Delegated Orders – Adult Trauma	AT 05	Page 196
<u>TOC</u>			

Criteria and History:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Decreased or loss of vision – Mechanism of injury – Sprayed with CS spray ▪ Physical Findings: <ul style="list-style-type: none"> – Injury to the globe, open or closed, including: <ul style="list-style-type: none"> o Corneal abrasion o Foreign body in eye o Chemical burn o Lacerated or avulsed globe o “Arc” burn of globe – Excessive tearing and burning of the eyes, nasal drainage, salivation | <p>If object impaled, refer to AT 09 – Penetrating Injury Protocol and stabilize in place while shielding both eyes to prevent sympathetic movement.</p> |
|--|---|

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- Spinal motion restriction if indicated
- Dress and bandage wound as appropriate
- IF chemical burn / CS or OC spray:
 - Flush continuously with copious amounts of water or NS
- IF open injury to globe:
 - Shield both eyes
- IF corneal abrasion, arc burn, or foreign body:
 - Remove foreign body if globe not penetrated
 - Shield affected eye

EMT Intermediate:

- Vascular Access
 - If severe pain or nausea and/or vomiting present and able to accomplish without increasing Intraocular pressure

Paramedic:

- IF corneal abrasion, arc burn, or foreign body:
 - Tetracaine 1 – 2 gtt in affected eye, Repeat as needed
 - Remove foreign body if globe not penetrated
 - Shield affected eye
- Pain Management

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	HEAD TRAUMA	
	Standard Delegated Orders – Adult Trauma	AT 06	Page 197
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent event
 - Mechanism of injury
- **Physical Findings:**
 - Altered mental status
 - Loss of consciousness

Assessment:

- Trauma Assessment

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

First Responder and EMT Basic:

- Helmet Removal
 - For airway management if clinically indicated
- Spinal Motion Restriction
- O₂ via most appropriate method

Helmet Removal

Maintain neutral alignment with padding as needed after removal

Football Helmet Removal

Leave helmet in place and remove face mask only. If helmet must be removed, remove helmet and shoulder pads together as one unit to maintain neutral alignment.

EMT Intermediate:

- Inline intubation, if needed
- Vascular Access

Elevate head to 30 degree angle

Inline Intubation

- Limit 2 attempts then use Combitube

	TAMU EMRC-EMS	HEAD TRAUMA	
	Standard Delegated Orders – Adult Trauma	AT 06	Page 198
TOC			

Paramedic:

- Midazolam 2 – 5 mg IV/IM/IO/IN for patient safety sedation in combative patient
- PAI
- Consider Air Medical Provider (AMP)

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible

Class II: soft palate, fauces and uvula visible

Class III: soft palate, base of uvula visible

Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- Rapid transport to appropriate facility is crucial
 - **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	MULTI-SYSTEM TRAUMA	
	Standard Delegated Orders – Adult Trauma	AT 07	Page 199
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
- **Physical Findings:**
 - Injury to the chest, abdomen or pelvis
 - Multiple soft-tissue or musculoskeletal injuries

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- Spinal Motion Restriction
- O₂ via most appropriate method
- Occlude open chest wounds

EMT Intermediate:

- Inline Intubation, if needed
- Vascular Access
 - Bilateral, using large bore catheters
 - Consider Blood-Y
- Fluid Bolus to systolic B/P of 90 mmHg

Inline Intubation

- Limit 2 attempts then use Combitube

Paramedic:

- Chest Decompression as needed
- PAI
- Consider Air Medical Provider (AMP)
- Fentanyl only from Pain Management

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	MUSCULOSKELETAL-SOFT TISSUE INJURY	
	Standard Delegated Orders – Adult Trauma	AT 08	Page 200
TOC			

Criteria and History:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Mechanism of injury ▪ Physical Findings: <ul style="list-style-type: none"> – Pain on palpation or movement – Ecchymosis, swelling, deformity | <p>If patient is found to have lain motionless in one position for a period of equal to or greater than 6 hours as a result of a fall or otherwise, be cautious for development of compartmental syndrome. Patients meeting this criteria should have gentle handling and be transported for evaluation.</p> |
|---|--|

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ Spinal motion restriction ▪ Control hemorrhage ▪ Splint ▪ Cooling of injury site ▪ Fracture reduction by inline traction if no pulse is detected and if it is a closed fracture <ul style="list-style-type: none"> – One attempt only – If still no pulse, splint in position | <p>Check PMS before and after applying splint</p> |
|---|---|

EMT Intermediate:

- Vascular Access

Paramedic:

- Pain Management
- C-Spine clearance

Consult:

- Additional Pain Management

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	PENETRATING INJURY	
	Standard Delegated Orders – Adult Trauma	AT 09	Page 201
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
 - Note ballistics
- **Physical Findings:**
 - A penetrating injury to any body part
 - Entrance / exit wounds

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Occlude chest wounds
- Control hemorrhage
- Spinal Motion Restriction
- Stabilize impaled objects
- Bandage and dress open wounds

EMT Intermediate:

- Vascular Access

Paramedic:

- Chest decompression as needed
- Pain Management

Consult:

- Additional Pain Management

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	SEXUAL ASSAULT	
	Standard Delegated Orders – Adult Trauma	AT 10	Page 202
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Report of recent sexual assault
- **Physical Findings:**
 - Signs of assault or injury

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Assure scene and personal safety ▪ Provide emotional support ▪ O₂ via most appropriate method ▪ Treat underlying injuries | <p>Do not let patient bathe or change clothing. If law enforcement is not on scene, collect any pertinent items in a paper bag, if available. Any blankets or sheets used by or on patient during transport should accompany patient into the receiving facility.</p> <p>If a paper bag is not available, an unused biohazard bag may be substituted to hold clothing or other items during transport but must not be tied or sealed, as a closed plastic environment may damage or destroy evidence. All items collected should be transported with the patient and transferred to law enforcement custody as soon as possible. It is imperative that integrity of the chain of evidence be maintained at all times.</p> <p>In the event of hostile family or caregivers, avoid confrontations that might interfere with removing patient from the environment.</p> |
|---|--|

EMT Intermediate:

- Same as above

Paramedic:

- Same as above

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
 - Refer to appropriate protocol for specific injuries or conditions.
-

	TAMU EMRC-EMS	SPINAL TRAUMA	
	Standard Delegated Orders – Adult Trauma	AT 11	Page 203
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
- **Physical Findings:**
 - Presence of decreased neurological function below site of injury
 - Loss of sensation
 - Inability to move
 - Hypotension

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- Spinal Motion Restriction
- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
- Fluid Bolus to systolic B/P of 90 mmHg
- Zofran 8 mg oral disintegrating tablet (ODT) PO
 - May be repeated every 15 min

Paramedic:

- Promethazine 12.5 mg IV/IO/IM
 - For N/V
 - May repeat x 1 if nausea/vomiting persists after 15 minutes
- PAI
- Consider Air Medical Provider (AMP)

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
 - **Transport to appropriate facility**
-

	TAMU EMRC-EMS	TASER	
	Standard Delegated Orders – Adult Trauma	AT 12	Page 204
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Patient shot with a taser gun
 - **Physical Findings:**
 - Taser probe embedded in a patient
-

Assessment:

- Trauma Assessment
-

First Responder and EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Assure scene and personal safety ▪ Assure electrical output is no longer surging through the probe ▪ Remove probe from patient unless embedded in breast area, groin, or face ▪ Wound care | <p>To remove probe, hold skin taut, grasp probe between thumb and forefinger, and pull straight out.</p> |
|---|--|
-

EMT Intermediate:

- Same as above
-

Paramedic:

- Same as above
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	TRAUMATIC ARREST	
	Standard Delegated Orders – Adult Trauma	AT 13	Page 205
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent events
 - Surgical problem
- **Physical Findings:**
 - Trauma
 - Pulseless
 - Apneic
- **ECG Findings:**
 - Any non-perfusing rhythm

Assessment:

- Trauma Assessment
-

First Responder:

- CPR
 - BVM ventilation with 100% O₂
 - Maintain open airway with OPA
 - Spinal Motion Restriction
 - Application of AED
 - Occlude open chest wounds
-

EMT Basic:

- CPR
 - BVM ventilation with 100% O₂
 - Combitube with inline stabilization
-

EMT Intermediate:

- Inline intubation
- Vascular Access
 - Bilateral, using large bore catheters
 - Consider Blood-Y
- Fluid Bolus to systolic B/P of 90 mmHg

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Inline Intubation

- Limit 2 attempts then use Combitube
-

	TAMU EMRC-EMS	TRAUMATIC ARREST	
	Standard Delegated Orders – Adult Trauma	AT 13	Page 206
<u>TOC</u>			

Paramedic:

- Chest Decompression
- Dysrhythmia treatment per specific protocol
- #18 fr Nasogastric tube placement
- Pericardiocentesis

Consult:

- Pre-Hospital Trauma Termination

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

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PEDIATRIC BEHAVIORAL



	TAMU EMRC-EMS	BEHAVIORAL ASSESSMENT	
	Standard Delegated Orders – Pediatric Behavioral	PB 01	Page 209
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - PMHx of psychiatric problems
 - Use of psychiatric medication
 - Substance Abuse
- **Physical Findings:**
 - Altered mental status
 - Evidence of trauma
 - Fear, anger, confusion, or hostility

Assessment:

- Determine that the scene is safe before entering
- GCS
- C.A.B.C.
- Secondary Assessment
- Vital signs
- Blood Glucose
- Pertinent PMHx
 - Does the patient have previous suicide attempts or ideations?
 - Is the patient under care of a psychologist/psychiatrist?
 - Is the patient cared for by others or self-reliant?
- SUBJECT IN CUSTODY RISK ASSESSMENT SCALE (SICRAS)

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

- **Refer to appropriate protocol for treatment based on assessments**
 - **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	ABUSE / NEGLECT	
	Standard Delegated Orders – Pediatric Behavioral	PB 02	Page 210
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent events
- **Physical Findings:**
 - Contusions at different healing stages
 - Malnourished appearance
 - Withdrawn

Assessment:

- Behavioral Assessment

First Responder and EMT Basic:

- Apply pressure to any hemorrhage
- O₂ via most appropriate method
- Spinal Motion Restriction, if indicated
- Bandaging / splinting
- Report abuse to Child Protective Services (CPS)

Contact information for CPS:
1-800-252-5400 or
<https://www.txabusehotline.org>

EMT Intermediate:

- Vascular Access

Paramedic:

- C-Spine clearance, if indicated
- Consider pain management if appropriate

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	AGGRESSIVE / VIOLENT BEHAVIOR	
	Standard Delegated Orders – Pediatric Behavioral	PB 03	Page 211
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Known violence
 - Aggression
- **Physical Findings:**
 - Agitation
 - Offensive posture
 - Combative
 - Hallucinations

Assessment:

- Behavioral Assessment

First Responder and EMT Basic:

- Reassure patient
- If patient is physically harmful, soft restraints
- O₂ via most appropriate method
- Spinal Motion Restriction, if indicated

EMT Intermediate:

- Vascular Access

Paramedic:

- C-Spine clearance, if indicated
- Midazolam 0.1 mg/kg IV/IM/IO/IN
OR
- Diazepam 0.2 – 0.3 mg/kg IV/IO

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	ANXIETY / EMOTIONAL DISTRESS	
	Standard Delegated Orders – Pediatric Behavioral	PB 04	Page 212
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of Recent Traumatic Event
 - Post Trauma Stress Disorder
 - **Physical Findings:**
 - Agitation
 - Hyperventilation
 - Hallucinations
 -
-

Assessment:

- Behavioral Assessment
-

First Responder and EMT Basic:

- O₂ via most appropriate method
-

EMT Intermediate:

- Vascular Access
-

Paramedic:

- C-Spine clearance, if indicated
 - Midazolam 0.1 mg/kg IV/IM/IO/IN
OR
 - Diazepam 0.2 – 0.3 mg/kg IV/IO
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

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PEDIATRIC CARDIAC



	TAMU EMRC-EMS	CARDIAC ASSESSMENT	
	Standard Delegated Orders – Pediatric Cardiac	PC 01	Page 215
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Preceding Symptoms
 - CPR and/or Treatment PTA
 - PMHx
 - **Physical Findings:**
 - Altered mental status
 - Slow, fast or absent pulse
 - Irregular pulse
 - Dyspnea/Apnea
 - Chest pain/Palpitations
 - Diaphoresis
 - Pale, ashen or mottled skin
-

Assessment:

- C.A.B.C.
- Secondary Assessment
- Vital Signs
- ECG 3-Lead and 12-Lead
 - Right sided 12-Lead if indicated
- Blood glucose
- Lung sounds
- GCS
- OPQRST
- ASPN
- SAMPLE

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

- **Refer to appropriate protocol for treatment based on assessments**
 - **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	ASYSTOLE	
	Standard Delegated Orders – Pediatric Cardiac	PC 02	Page 216
<u>TOC</u>			

Criteria and History:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Medical etiology ▪ Physical Findings: <ul style="list-style-type: none"> – Unconscious – Pulseless – Agonal respirations; apnea ▪ ECG Findings: <ul style="list-style-type: none"> – Asystole confirmed in two or more leads | <ul style="list-style-type: none"> ▪ Determine if resuscitation is medically inappropriate <ul style="list-style-type: none"> – Normothermic rigor-mortis – Injuries Incompatible with life – Decomposition – Lividity – Pulseless, apneic patients in multiple casualty situations – Proper DNR documentation |
|---|---|

Assessment:

- Cardiac Assessment

First Responder:

- CPR
 - BVM with high flow O₂
 - Maintain open airway with OPA
- Application of AED

EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ ResQPOD | Remove ResQPOD immediately if ROSC occurs |
|---|--|

EMT Intermediate:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Intubate ▪ Vascular Access ▪ Fluid Bolus <ul style="list-style-type: none"> – May repeat x 2 | <p><u>ET Tube Confirmation</u></p> <ul style="list-style-type: none"> – Confirm with 5 methods as per procedure <p><u>Capnometry Reference:</u></p> <ul style="list-style-type: none"> – EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg – Look for causes for asystolic rhythm |
|--|---|

Paramedic:

- Epinephrine 0.01 mg/kg (0.1 ml/kg 1:10,000) IV/IO
 - q 3-5 min
- IF NO VASCULAR ACCESS, Epinephrine 0.1 mg/kg (0.1 ml/kg 1:1,000) ET
 - q 3 -5 min

Consult:

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**

	TAMU EMRC-EMS	BRADYCARDIA	
	Standard Delegated Orders – Pediatric Cardiac	PC 03	Page 217
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Weak, dizzy
 - Chest pain
 - Pulmonary edema
 - AMS
 - Hemodynamically unstable
- **ECG Findings:**
 - Any underlying cardiac rhythm with a bradycardic rate

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- CPR if HR < 60 with poor perfusion despite oxygenation and ventilation

EMT Intermediate:

- Vascular Access

Paramedic:

- Epinephrine 0.01 mg/kg (0.1 ml/kg 1:10,000) IV/IO
 - q 3-5 min
- IF NO VASCULAR ACCESS, Epinephrine 0.1 mg/kg (0.1 ml/kg 1:1,000) ET
 - q 3-5 min
- Atropine 0.02 mg/kg IV/ET/IO
 - Minimum single dose 0.1 mg
 - Maximum single dose 0.5 mg for a pediatric patient
 - May be repeated x 1
- Epinephrine Infusion 0.1 – 1 mcg/kg/min
 - If refractory to Epinephrine IV/IO
 - To mix Epinephrine infusion:
 - 0.6 multiplied by the child's weight in kg. This amount (in mg) is then added to enough IV solution to equal a total volume of 100 ml.
 - Infuse at **20 ml/hr** until clinical response (increased heart rate OR blood pressure **OR** improved systemic perfusion)
 - Reduce infusion to **0.1 to 1 mcg/kg/minute**
 - 10 ml/hr equals 1mcg/kg/minute
- Consider Cardiac Pacing

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	HYPOTHERMIA / HYPOTHERMIC ARREST	
	Standard Delegated Orders – Pediatric Cardiac	PC 04	Page 218
TOC			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Pulseless
 - Agonal respirations; apnea
 - Environmental evidence of hypothermia
- **ECG Findings:**
 - Any pulseless rhythm

Assessment:

- Cardiac Assessment
- Core Temperature

First Responder:

- CPR
 - BVM ventilation with warm 100% O₂
Humidified
 - Maintain open airway with OPA
- Warm Patient
 - Remove wet clothing
 - Heat packs to arm pits and groins
- Application of AED

EMT Basic:

- | | |
|-----------|--|
| ▪ ResQPOD | Remove ResQPOD immediately if ROSC occurs |
|-----------|--|

EMT Intermediate:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Intubation ▪ Vascular Access <ul style="list-style-type: none"> – Use warm fluid | <p><u>ET Tube Confirmation</u></p> <ul style="list-style-type: none"> – Confirm with 5 methods as per procedure <p><u>Capnometry Reference:</u></p> <ul style="list-style-type: none"> – EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg |
|---|---|

	TAMU EMRC-EMS	HYPOTHERMIA / HYPOTHERMIC ARREST	
	Standard Delegated Orders – Pediatric Cardiac	PC 04	Page 219
<u>TOC</u>			

Paramedic:

- If V-Fib
 - Biphasic defibrillation
- Refer to appropriate rhythm protocol for medication reference

Defibrillation Reference

- 1 defibrillation at 2 j/kg followed by resumption of chest compressions. Subsequent defibrillations at 4 j/kg every 5 cycles of CPR if patient remains in V-Fib or Pulseless V-Tach
- **NO** pulse checks following defibrillation; resume CPR immediately for 5 cycles, then reevaluate rhythm/check for pulses.
- **Do not repeat** defibrillation and do not medicate if temperature is below 85° F

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	NARROW COMPLEX TACHYCARDIA - STABLE	
	Standard Delegated Orders – Pediatric Cardiac	PC 05 - A	Page 220
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of SVT
 - History of A-Fib or A-Flutter
 - **Physical Findings:**
 - Hemodynamically stable
 - **ECG Findings:**
 - Narrow Complex Tachycardia (refer to assessment chart for parameters)
 - QRS < 0.08 seconds
-

Assessment:

- Cardiac Assessment
-

First Responder and EMT Basic:

- O₂ via most appropriate method
-

EMT Intermediate:

- Vascular Access
 - Fluid Bolus
 - May repeat x 2
-

Paramedic:

- Valsalva maneuver by patient
 - Adenosine 0.1 mg/kg RAPID IV/IO followed by 10 ml flush
 - Max first dose 6 mg
 - May repeat x 1 as 0.2 mg/kg RAPID IV/IO followed by 10 ml flush of NS
 - Maximum second dose 12 mg
 - Amiodarone 5 mg/kg IV/IO over 20 – 60 min
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	NARROW COMPLEX TACHYCARDIA - UNSTABLE	
	Standard Delegated Orders – Pediatric Cardiac	PC 05 - B	Page 221
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of SVT / use of adenosine
 - History of A-Fib or A-Flutter or WPW
- **Physical Findings:**
 - Hemodynamically unstable and/or any of the following:
 - Chest pain
 - Dyspnea
 - Lethargy
 - Dizziness
 - Pulmonary edema
 - AMS
- **ECG Findings:**
 - Narrow Complex Tachycardia (refer to assessment chart for rate parameters)
 - QRS < 0.08 seconds

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access

Paramedic:

- Synchronized Cardioversion
- Adenosine 0.1 mg/kg RAPID IV/IO followed by 10 ml flush
 - Max first dose 6 mg
 - May repeat x 1 as 0.2 mg/kg RAPID IV/IO followed by 10 ml flush of NS
 - Max second dose 12 mg
- Midazolam 0.1 mg/kg IV/IM/IO/IN
 - For sedation prior to cardioversion
- Amiodarone 5 mg/kg IV/IO over 20 – 60 min

Cardioversion reference:

- 0.5 j/kg
- 1 j/kg
- 2 j/kg
- 4 j/kg

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol
-

	TAMU EMRC-EMS	NON-TRAUMATIC CHEST PAIN	
	Standard Delegated Orders – Clinical Guidelines	PC 06	Page 222
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
 - **Physical Findings:**
 - Chest discomfort
 - Back, shoulder, neck, jaw, epigastric discomfort
 - Hemodynamically stable
 - **ECG Findings:**
 - No evidence of ischemia or injury
-

Assessment:

- Cardiac Assessment
-

First Responder and EMT Basic:

- | | |
|---|----------------------------------|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method | Identify and treat other causes. |
|---|----------------------------------|
-

EMT Intermediate:

- Vascular Access
 - Zofran oral disintegrating tablet (ODT) PO
 - Weight 8kg-30kg 4mg ODT PO
 - Weight >30kg 8mg ODT PO
 - May be repeated every 15 min
-

Paramedic:

- Promethazine 0.5 mg/kg IV/IO/IM
 - For N/V
 - May be repeated x 1 if N/V persists after 15 minutes
 - Maximum single dose of 12.5 mg
 - Pain Management
-

Consult:

- Additional Pain Management
-

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	POST RESUSCITATION MGMT	
	Standard Delegated Orders – Pediatric Cardiac	PC 07	Page 223
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Post cardiac arrest
 - **Physical Findings:**
 - Patient with spontaneous circulation (palpable carotid/radial pulse) AFTER being treated for any non-perfusing rhythm
 - **ECG Findings:**
 - Any perfusing rhythm
-

Assessment:

- Cardiac Assessment
-

First Responder and EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method | Remove ResQPOD immediately if ROSC occurs |
|---|--|
-

EMT Intermediate:

- Vascular Access
 - Fluid Bolus
 - Naloxone 0.1 mg/kg IV/IO/IN
 - Max single dose of 2 mg
 - Repeat every 2 – 3 minutes
-

Paramedic:

- Lidocaine 1 mg/kg IV/IO
 - If patient did not previously receive and converted from a ventricular rhythm WITHOUT bradycardia
 - Lidocaine Infusion 20 – 50 mcg/kg/min
 - If patient received Lidocaine prior to Return of Spontaneous Circulation (ROSC)
 - Epinephrine Infusion 0.1 – 1 mcg/kg/min
 - If refractory to Epinephrine IV/IO
 - To mix Epinephrine infusion:
 - 0.6 multiplied by the child's weight in kg. This amount (in mg) is then added to enough IV solution to equal a total volume of 100 ml.
 - Infuse at **20 ml/hr** until clinical response (increased heart rate OR blood pressure **OR** improved systemic perfusion)
 - Reduce infusion to **0.1 to 1 mcg/kg/minute**
 - 10 ml/hr equals 1mcg/kg/minute
 - Sodium Bicarbonate 1 mEq/kg IV/IO
 - If evidence of metabolic acidosis
 - Amiodarone 5 mg/kg IV/IO over 20 – 60 min
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	PULSELESS ELECTRICAL ACTIVITY	
	Standard Delegated Orders – Pediatric Cardiac	PC 08	Page 224
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Unconscious
 - Pulseless
 - Agonal respirations; apnea
- **ECG Findings:**
 - Pulseless rhythm; not V-fib, V-Tach, Asystole

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- CPR
- BVM Ventilation with high-flow O₂
- ResQPOD (EMT-B and above only)
- Maintain airway with OPA
- Application of AED

Removed ResQPOD immediately if ROSC occurs

EMT Intermediate:

- Intubate
- Vascular Access
- Fluid Bolus
- Naloxone 0.1 mg/kg IV/IO/IN
 - Max single dose of 2 mg
 - Repeat every 2 – 3 minutes

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Paramedic:

- Fluid Bolus prior to Epinephrine
- Epinephrine 0.01 mg/kg (0.1 ml/kg 1:10,000) IV/IO
 - q 3 – 5 min
- IF NO VASCULAR ACCESS, Epinephrine 0.1 mg/kg (0.1 ml/kg 1:1,000) ET
 - q 3 – 5 min
- Chest Decompression of pneumothorax is present
- Sodium Bicarbonate 1 mEq/kg IV/IO

Consider all other treatable causes

- Hypoxia – ventilation
- Hypoglycemia – dextrose
- Hypothermia – warming
- Hyperkalemia – calcium gluconate and sodium bicarbonate
- Acidosis – ventilation and sodium bicarbonate
- Massive MI – Heart cath
- Hypovolemia/hypotension – fluid replacement
- Pulmonary embolism – surgery
- Cardiac tamponade – pericardiocentesis
- Drug overdose – Naloxone
- Tension pneumothorax – chest decompression

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	VENTRICULAR ECTOPY	
	Standard Delegated Orders – Pediatric Cardiac	PC 09	Page 225
<u>TOC</u>			

Criteria and History:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Medical etiology ▪ Physical Findings: <ul style="list-style-type: none"> – Chest pain with weakness, dizziness, dyspnea, irregular rhythm ▪ ECG Findings: <ul style="list-style-type: none"> – Six or more PVC's per minute – Multiform PVC's – Couplets, triplets – Evidence of AMI in absence of bradycardia | <ul style="list-style-type: none"> ▪ Potential for the occurrence of R-on-T phenomenon |
|--|---|

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access

Paramedic:

- Lidocaine 1 mg/kg IV/IO
 - q 5 minutes as 0.5 mg/kg up to 3 mg/kg total
- Lidocaine Infusion 20 – 50 mcg/kg/min
 - If successful conversion of the rhythm with Lidocaine bolus
- Amiodarone 5 mg/kg IV/IO over 20 – 60 minutes

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA	
	Standard Delegated Orders – Pediatric Cardiac	PC 10	Page 226
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Unconscious
 - Pulseless
 - Agonal respirations; Apnea
- **ECG Findings:**
 - V-Fib or Pulseless V-Tach

Assessment:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Cardiac Assessment | <ul style="list-style-type: none"> – Consider all potential non-cardiac causes – Remove any secretions, or any vomitus |
|--|--|

First Responder:

- Continuous CPR
 - BVM ventilation with 100% O₂
 - Maintain open airway with OPA
- Application of AED

EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ ResQPOD | Remove ResQPOD immediately if ROSC occurs |
|---|--|

EMT Intermediate:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Intubate; respiratory rate 8 breaths per minutes ▪ Vascular Access ▪ Naloxone 0.1 mg/kg IV/IO/IN <ul style="list-style-type: none"> – Max single dose of 2 mg – Repeat every 2 – 3 minutes | <p><u>ET Tube Confirmation</u></p> <ul style="list-style-type: none"> – Confirm with 5 methods as per procedure <p><u>Capnometry Reference:</u></p> <ul style="list-style-type: none"> – EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg – Naloxone for suspected Drug Overdose |
|---|---|

	TAMU EMRC-EMS	VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA	
	Standard Delegated Orders – Pediatric Cardiac	PC 10	Page 227
TOC			

Paramedic:

- If witnessed, immediate defibrillation
- Continuous chest compressions 1 – 2 minutes prior to defibrillation and medication administration
 - If arrest is not witnessed by responding unit
 - BVM ventilation with 100% O₂
 - Maintain open airway with OPA
- Continuous CPR
- Deliver defibrillation
- Epinephrine 0.01 mg/kg (0.1 ml/kg 1:10,000) IV/IO
 - q 3 – 5 min
- IF NO VASCULAR ACCESS, Epinephrine 0.1 mg/kg (0.1 ml/kg 1:1,000) ET
 - q 3 – 5 min
- Amiodarone 5 mg/kg IV/IO
OR
- Lidocaine 1.0 mg/kg IV/IO/ET
- Magnesium Sulfate 25 – 50 mg/kg IV/IO
 - For Torsades de Pointes or Hypomagnesemia
 - Maximum dose of 2 grams
- Sodium Bicarbonate 1mEq/kg IV/IO

Defibrillation Reference

- 1 defibrillation at 2 j/kg followed by resumption of chest compressions. Subsequent defibrillations at 4 j/kg every 5 cycles of CPR if patient remains in V-Fib or Pulseless V-Tach
- **NO** pulse checks following defibrillation; resume CPR immediately for 5 cycles, then reevaluate rhythm/check for pulses.
- **Do not repeat** defibrillation and do not medicate if temperature is below 85° F
- Amiodarone is known to cause hypotension and decrease cardiac contractility; providers must weight the potential for causing hypotension against the need to achieve a rapid desired effect.
- If V-Fib and/or pulseless V-Tach refractory to Amiodarone, try Lidocaine as second line antiarrhythmic.
- Only Administer Magnesium Sulfate with:
 - Refractory V-Fib
 - Torsades Des Pointes
- Naloxone for suspected Drug Overdose
- Sodium Bicarbonate for Acidosis and Tricyclic Antidepressant (TCA) overdose

Consult:

Critical Points:

- If VF or pulseless VT reoccurs after transiently converting, defibrillate at whatever energy level has been previously successful for defibrillation.
- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	WIDE COMPLEX TACHYCARDIA - STABLE	
	Standard Delegated Orders – Clinical Guidelines	PC 11 - A	Page 228
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Hemodynamically stable
 - Palpitations
- **ECG Findings:**
 - Wide Complex Tachycardia, Ventricular Tachycardia (QRS > 0.08 seconds)

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access

Paramedic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Amiodarone infusion 5 mg/kg IV/IO over 20 – 60 minutes ▪ Lidocaine 1 mg/kg IV/IO <ul style="list-style-type: none"> – q 5 minutes as 0.5 mg/kg up to 3 mg/kg total ▪ Lidocaine Infusion 20 – 50 mcg/kg/min <ul style="list-style-type: none"> – If successful conversion of the rhythm with lidocaine bolus | <ul style="list-style-type: none"> – Amiodarone is known to cause hypotension and decrease cardiac contractility; providers must weight the potential for causing hypotension against the need to achieve a rapid desired effect. |
|---|--|

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol

	TAMU EMRC-EMS	WIDE COMPLEX TACHYCARDIA - UNSTABLE	
	Standard Delegated Orders – Pediatric Cardiac	PC 11 - B	Page 229
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Medical etiology
- **Physical Findings:**
 - Hemodynamically unstable and/or any of the following:
 - Chest pain
 - Dyspnea
 - Lethargy
 - Dizziness
 - Pulmonary edema
 - AMS
- **ECG Findings:**
 - Wide Complex Tachycardia, Ventricular Tachycardia (QRS > 0.08 seconds)

Assessment:

- Cardiac Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access

Paramedic:

- Midazolam 0.1 mg/kg IV/IM/IO/IN
 - For sedation prior to cardioversion
- Synchronized Cardioversion
 - 0.5 j/kg
 - 1 j/kg
 - 2 j/kg
 - 4 j/kg
- Amiodarone infusion 5 mg/kg IV/IO over 20 – 60 min
- Lidocaine 1 mg/kg IV/IO
 - q 5 minutes as 0.5 mg/kg up to 3 mg/kg total
- Lidocaine Infusion 20 – 50 mcg/kg/min
 - If successful conversion of the rhythm with lidocaine bolus

Cardioversion reference:

- 0.5 j/kg
- 1 j/kg
- 2 j/kg
- 4 j/kg
- Amiodarone is known to cause hypotension and decrease cardiac contractility; providers must weight the potential for causing hypotension against the need to achieve a rapid desired effect.

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol

PEDIATRIC ENVIRONMENTAL



	TAMU EMRC-EMS	ENVIRONMENTAL ASSESSMENT	
	Standard Delegated Orders – Pediatric Environmental	PE 01	Page 231
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Exposure to extreme temperatures
 - Envenomation
 - Wilderness exposure
 - Exposure to hazardous materials
- **Physical Findings:**
 - Hyperthermia/Hypothermia
 - Altered Mental Status
 - Shivering
 - Frostbite
 - Dyspnea
 - Evidence of bite, sting or exposure to chemicals
 - Nausea/Vomiting
 - Dizziness/Weakness
 - Sweating
 - Abdominal pain

Assessment:

- C.A.B.C.
- Secondary Assessment
- Vital signs
- ECG 3-Lead and 12-Lead if appropriate
 - Right sided 12-Lead if indicated
- Blood Glucose
- Temperature
- Lung sounds
- GCS
- OPQRST
- ASPN
- SAMPLE
- Length of Exposure

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

- **Refer to appropriate protocol for treatment based on assessments**
 - **Any changes in patient condition, refer to appropriate protocol**
-

	TAMU EMRC-EMS	COLD RELATED EMERGENCY	
	Standard Delegated Orders – Pediatric Environmental	PE 02	Page 232
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Immersion or exposure to cold temperatures
- **Physical Findings:**
 - Core temperature < 96 degrees F
 - Shivering
 - Altered mental status
 - Cyanosis

Assessment:

- Environmental Assessment

First Responder and EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ Prevent further heat loss ▪ Passive rewarming | Passive rewarming: <ul style="list-style-type: none"> ▪ Remove wet clothing ▪ Warm blankets ▪ Wrap heat packs and apply to axillary and groin regions |
|---|--|

EMT Intermediate:

- | | |
|---|--------------------|
| <ul style="list-style-type: none"> ▪ Vascular Access | Use warm IV fluids |
|---|--------------------|

Paramedic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ 3-Lead ECG ▪ 12-Lead ECG | For persistent shivering or active seizures, refer to Seizure protocol |
|---|--|

Consult:

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**
-

	TAMU EMRC-EMS	HEAT RELATED EMERGENCY	
	Standard Delegated Orders – Pediatric Environmental	PE 03	Page 233
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Exposure to heat
- **Physical Findings:**
 - Environmental potential of heat related emergency
 - Normothermic or hyperthermic with weakness, dizziness, N/V, syncope, sweating
- **ECG Findings:**
 - Tachycardia

Assessment:

- Environmental Assessment

Heat Cramps

- Cramps in extremities or abdomen

Heat Exhaustion

- Temperature normal or 1 -2 degrees above normal with weakness, dizziness, nausea, syncope, profuse sweating, tachycardia

Heat Stroke

- Temperature of 105 degrees F or greater and any of the following: AMS, Seizure activity, lack of sweating, cardiac arrest

First Responder and EMT Basic:

- O₂ via most appropriate method
- External Cooling
- Trendelenburg

Remove patient's clothing
Apply cold packs to axillary and groin regions
Avoid excessive cooling

EMT Intermediate:

- Vascular Access
- Fluid Bolus
- Zofran oral disintegrating tablet (ODT) PO
 - Weight 8kg-30kg 4mg ODT PO
 - Weight >30kg 8mg ODT PO
 - May be repeated every 15 min

Paramedic:

- Promethazine 0.5 mg/kg IV/IO/IM for N/V
 - May be repeated x 1 if N/V persists after 15 minutes
 - Maximum single dose 12.5 mg

For persistent shivering or active seizures, refer to Seizure protocol

Consult:

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**

	TAMU EMRC-EMS	INSECT / ANIMAL / SNAKE BITE	
	Standard Delegated Orders – Pediatric Environmental	PE 04	Page 234
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Preceding event
- **Physical Findings:**
 - Pain to location of bite/sting
 - Known or suspected envenomation by an insect or snake

Assessment:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Environmental Assessment | <p>For snake bites to an extremity, keep the patient supine and immobilize the limb in a straight position with a splint and keep the limb at the level of the heart. Placing bends in the immobilized limb (such as a 90 degree bend at the elbow) can allow toxins to accumulate and cause extensive necrosis.</p> <p>Do not apply ice, cold pack or tourniquet or constricting band.</p> |
|--|---|

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
- Zofran oral disintegrating tablet (ODT) PO
 - Weight 8kg-30kg 4mg ODT PO
 - Weight >30kg 8mg ODT PO
 - May be repeated every 15 min

Paramedic:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Pain Management ▪ Promethazine 0.5 mg/kg IV/IO/IM <ul style="list-style-type: none"> – For N/V – May be repeated x 1 if N/V persists after 15 minutes – Maximum single dose 12.5 mg ▪ Consider Diphenhydramine 1 mg/kg IV/IM/IO if antihistamine therapy appears to be indicated <ul style="list-style-type: none"> – Max single dose of 25 mg | <p>For persistent shivering or active seizures, refer to Seizure protocol</p> <p>For allergic reaction, refer to Allergic Reaction protocol</p> |
|--|---|

Consult:

- Additional Pain Management

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**

	TAMU EMRC-EMS	NEAR DROWNING	
	Standard Delegated Orders – Pediatric Environmental	PE 05	Page 235
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Water submersion without cardiopulmonary arrest and without evidence of hypothermia
 - **Physical Findings:**
 - Dyspnea, difficulty breathing
-

Assessment:

- Environmental Assessment
-

First Responder and EMT Basic:

- Remove from water
- O₂ via most appropriate method
- Capnography
- External warming if indicated

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg
-

EMT Intermediate:

- Intubate
 - If unconscious and unable to protect airway
- Vascular Access
- PEEP usage during ventilations 2 – 5 cm H₂O
- Tracheal suctioning via ETT

ET Tube Confirmation

- Confirm with 5 methods as per procedure

PEEP:

Use with caution in low perfusion state

Paramedic:

- Consider PAI
 - See Pediatric PAI Procedure

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	TOXICOLOGICAL / HAZ-MAT EXPOSURE	
	Standard Delegated Orders – Pediatric Environmental	PE 06	Page 236
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Determine type of exposure & refer to USDOT-ERG for initial assessment and management ▪ Physical Findings: – Findings will vary based upon contaminant ▪ If Organophosphates (OGP's) – SLUDGE-BM ▪ Salivation, Lacrimation (Tearing), Urination, Diarrhea/Defecation, GI Distress, Emesis, Bradycardia, & Miosis (Pinpoint pupils)	Hazardous Materials may fall under the following categories: ▪ Chemical ▪ Biological ▪ Nuclear ▪ Radioactive ▪ Explosive Most common OGP's are pesticides and produce an exaggerated parasympathetic response.
--	--

Assessment:

▪ Ensure that the patient has been decontaminated ▪ At NO TIME SHOULD EMS personnel enter the HOT or WARM Zone, unless wearing appropriate PPE. ▪ If exposure is localized and not generalize: – <i>Dry Chemical:</i> Brush the chemical off and flush with copious amounts of water. – <i>Wet Chemical:</i> Irrigate with copious amounts of water.	Medical Care should be coordinated with a Hazardous Materials Response Team Appropriate PPE may be either Level B partially encapsulated suits with PAPR (Positive Air Purifying Respirators) or Level A Fully encapsulated suits with SCBA. Water should be from a steady stream, for at least 15 – 20 minutes into a sanitary sewer
--	--

First Responder and EMT Basic:

▪ Assure scene and personal safety ▪ Assure that patient has been decontaminated appropriately ▪ Provide for oxygenation and ensure patent airway	
---	--

EMT Intermediate:

▪ Vascular Access	
---	--

Secondary Interventions:

▪ Evaluate ECG as appropriate ▪ For OGP, administer Atropine 1 mg repeated frequently until Bradycardia has resolved ▪ Consider need for PAI – See Pediatric PAI Procedure	Doses in excess of Atropine 0.02 mg/kg may be required to resolve Bradycardia in OGP.
---	--

Consult:

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol	
--	--

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PEDIATRIC MEDICAL



	TAMU EMRC-EMS	MEDICAL ASSESSMENT	
	Standard Delegated Orders – Pediatric Medical	PM 01	Page 239
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent events
 - PMHx
- **Physical Findings:**
 - Pain
 - Non-traumatic hemorrhage
 - Itching, swelling, hives
 - Altered mental status
 - Fever
 - Headache
 - Dyspnea

Assessment:

- C.A.B.C.
- Secondary Assessment
- Vital signs
- ECG 3-Lead and 12-Lead if appropriate
 - Right sided 12-Lead if indicated
- Blood Glucose
- Temperature
- Lung sounds
- GCS
- OPQRST
- ASPN
- SAMPLE

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

- Refer to appropriate protocol for treatment based on assessments
- Any changes in patient condition, refer to appropriate protocol

	TAMU EMRC-EMS	ALLERGIC REACTION	
	Standard Delegated Orders – Pediatric Medical	PM 02	Page 240
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Previous history
 - Exposure to allergen
- **Physical Findings:**
 - Mild Reaction – contact dermatitis (rash) and/or urticaria (hives), dermal itching
 - Moderate Reaction – mild reaction symptoms with dyspnea
 - Anaphylaxis – severe reaction symptoms with hypotension, difficulty swallowing, generalized edema, stridor

Assessment:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Medical Assessment | Patients should not receive more than 1 mg/kg Diphenhydramine between both IV/IM and PO routes. |
|--|---|

First Responder:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method <p><u>Mild:</u></p> <ul style="list-style-type: none"> ▪ Diphenhydramine 1 mg/kg PO <p><u>Moderate:</u></p> <ul style="list-style-type: none"> ▪ “Mild reaction” treatment in addition to: <ul style="list-style-type: none"> – Albuterol 2.5 mg/3 ml via Nebulizer – May repeat x 2 if beneficial response is seen <p><u>Anaphylaxis:</u></p> <ul style="list-style-type: none"> ▪ “Moderate reaction” treatment in addition to: ▪ Epi-Pen/Epi Pen Jr. administration in lateral thigh | |
|--|--|

EMT Basic:

- Same as above
- Anaphylaxis:
- “Moderate reaction” treatment in addition to:
 - May give Epinephrine 1:1,000 0.01 mg/kg IM up to 0.3 mg in place of Epi Pen/Epi Pen Jr administration for anaphylaxis

EMT Intermediate:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Vascular Access ▪ Fluid Bolus | |
|--|--|

	TAMU EMRC-EMS	ALLERGIC REACTION	
	Standard Delegated Orders – Pediatric Medical	PM 02	Page 241
<u>TOC</u>			

Paramedic:

Mild:

- Diphenhydramine 1 mg/kg IV/IM/IO
 - Max single dose of 25 mg

Moderate:

- “Mild reaction” treatment in addition to:
 - Albuterol 2.5 mg/3 ml via Nebulizer
 - May repeat x 2 if beneficial response is seen
- Methylprednisolone 2 mg/kg IV/IO
- Epinephrine 1:1,000 0.01 mg/kg IM up to 0.3 mg

Anaphylaxis:

- “Moderate reaction” treatment in addition to:
- Epinephrine 1:10,000 0.01mg/kg IV/IO
- Epinephrine 1:1,000 0.01 mg/kg IM
 - Maximum dose of 0.3 mg
- Epinephrine 1:1,000 0.01 mg/kg SL
 - If patient is obtunded or unconscious and vascular access cannot be established rapidly
 - Inject directly into the sublingual tissue
- Consider PAI
- See Pediatric PAI Procedure

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

- Additional Epinephrine 1:10,000 0.01 mg/kg IV/IO
 - If pt is unconscious with vascular collapse

Critical Points:

- **Any changes in patient condition, refer to appropriate protocol**

	TAMU EMRC-EMS	AMS / UNCONSCIOUS	
	Standard Delegated Orders – Pediatric Medical	PM 03	Page 242
<u>TOC</u>			

Criteria and History:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Medical etiology ▪ Physical Findings: <ul style="list-style-type: none"> – Unresponsive, disoriented WITHOUT a clear mechanism for Altered Mental Status (AMS) | Consider causes: <ul style="list-style-type: none"> – CVA – Hypoglycemia/hyperglycemia – Drug/Alcohol use – Recent trauma – Hepatic disease – Acidosis/electrolyte imbalance – Sepsis – Hypotension – Hypoxemia |
|---|---|

Assessment:

- Medical Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Vascular Access ▪ Naloxone 0.1 mg/kg IV/IO/IN <ul style="list-style-type: none"> – Max single dose of 2 mg – Repeat every 2 – 3 minutes | <ul style="list-style-type: none"> – Do not administer Naloxone if pt is intubated |
|---|---|

Paramedic:

- Consider PAI
 - See Pediatric PAI Procedure

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
Class II: soft palate, fauces and uvula visible
Class III: soft palate, base of uvula visible
Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- Any changes in patient condition, refer to appropriate protocol

	TAMU EMRC-EMS	DEHYDRATION	
	Standard Delegated Orders – Pediatric Medical	PM 04	Page 243
<u>TOC</u>			

Criteria and History:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Recent illness (vomiting, diarrhea, fever) ▪ Physical Findings: <ul style="list-style-type: none"> – Poor skin turgor – Little or no urine output – Dry mucous membranes | <ul style="list-style-type: none"> Compensated Hypovolemia <ul style="list-style-type: none"> – Normotension and tachycardia Uncompensated Hypovolemia <ul style="list-style-type: none"> – Hypotension and tachycardia |
|---|---|

Assessment:

- Medical Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
- Fluid Bolus
 - May repeat x 2 to maintain adequate B/P
 - If patient condition improves repeat fluid bolus unless patient develops pulmonary edema
- Zofran oral disintegrating tablet (ODT) PO
 - Weight 8kg-30kg 4mg ODT PO
 - Weight >30kg 8mg ODT PO
 - May be repeated every 15 min

Paramedic:

- Promethazine 0.5 mg/kg IV/IO/IM
 - For N/V
 - May be repeated x 1 if N/V persists after 15 minutes
 - Maximum single dose 12.5 mg

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	DIABETIC - HYPERGLYCEMIA	
	Standard Delegated Orders – Pediatric Medical	PM 05 - A	Page 244
<u>TOC</u>			

Criteria and History:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Medical etiology ▪ Physical Findings: <ul style="list-style-type: none"> – BGL > 180 mg/dL with one of the following: – AMS, tachypnea, abdominal pain, hypotension and tachycardia | Blood glucose < 80 refer to hypoglycemia protocol
Blood glucose < 40 in the neonate (<1 month old) refer to hypoglycemia protocol |
|--|--|

Assessment:

- Medical Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
- Fluid Bolus
 - May repeat x 2
 - Maintenance infusion of NS 20 ml/hr
 - Discontinue if pulmonary edema develops
- Zofran oral disintegrating tablet (ODT) PO
 - Weight 8kg-30kg 4mg ODT PO
 - Weight >30kg 8mg ODT PO
 - May be repeated every 15 min

Paramedic:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Promethazine 0.5 mg/kg IV/IO/IM for N/V <ul style="list-style-type: none"> – May be repeated x 1 if N/V persists after 15 minutes – Maximum single dose 12.5 mg ▪ Sodium Bicarbonate 1 mEq/kg IV <ul style="list-style-type: none"> – If metabolic acidosis is suspected | Consider Sodium Bicarbonate when pt is tachycardic, tachypneic, altered mental status |
|--|---|

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	DIABETIC - HYPOGLYCEMIA	
	Standard Delegated Orders – Pediatric Medical	PM 05 - B	Page 245
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Known history
 - New onset
- **Physical Findings:**
 - BGL < 80 mg/dL (< 40 mg/dL for newborns)
 - Signs and symptoms suggestive of Hypoglycemia: AMS, tremors, weakness, N/V, intense hunger, diaphoresis
 - BGL < 40 mg/dL should be treated, regardless of presence of other signs/symptoms

Assessment:

- Medical Assessment

First Responder and EMT Basic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ Oral glucose 7.5 – 15 g PO <ul style="list-style-type: none"> – Only in patients with intact gag reflex and able to follow commands to swallow medication | Oral Glucose <ul style="list-style-type: none"> – In minimally symptomatic patients who are old enough and capable of taking oral glucose solutions – Able to follow commands |
|--|--|

EMT Intermediate:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Vascular Access <ul style="list-style-type: none"> – Do Not delay transport to establish ▪ Thiamine 10 – 25 mg IV/IO or IM <ul style="list-style-type: none"> – Prior to Dextrose administration ▪ D50% 0.5 g/kg IV for children > 10 kg or 2 years of age
OR ▪ D25% 0.5 g/kg IV for infants < 10kg <ul style="list-style-type: none"> – May be repeated once in 5 min if symptoms not resolved – Repeat BGL in 10 minutes after D50%/D25% administration | Thiamine
For older children/teenagers with a significant history of alcohol use/abuse or malnourished children |
|---|--|

Paramedic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Thiamine 10 – 25 mg IV/IO or IM ▪ Repeat D50%/D25% administration if continued evidence of hypoglycemia on basis of persistent symptoms and glucometer reading ▪ Glucagon 0.5 mg IM/SQ if unable to obtain vascular access | Thiamine
For older children/teenagers with a significant history of alcohol use/abuse or malnourished children |
|--|--|

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	DYSTONIC REACTION	
	Standard Delegated Orders – Pediatric Medical	PM 06	Page 246
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Recent ingestion of phenothiazines, fluphenazines, other neuroleptics or related drugs used as antipsychotics and can also be used to treat GI disorders and nausea ▪ Physical Findings: – Protrusion of the tongue, twisted neck or facial spasms, roving or deviated gaze, abdominal rigidity or pain, spasm of the entire body, twitching	Promethazine Reglan (Metoclopramide) Propulsid Haldol
--	--

Assessment:

▪ Medical Assessment	Patients should not receive more than 1 mg/kg Diphenhydramine between both IV/IM and PO routes.
--	---

First Responder and EMT Basic:

▪ O₂ via most appropriate method ▪ Diphenhydramine 1 mg/kg PO if patient is able to follow commands and swallow without risk of aspiration	
--	--

EMT Intermediate:

▪ Vascular Access	
---	--

Paramedic:

▪ Diphenhydramine 1 mg/kg IV/IM/IO – Max single dose of 25 mg ▪ Midazolam 0.1 mg/kg IV/IM/IO/IN if no response is seen from Diphenhydramine	
---	--

Consult:

▪ Additional Midazolam 0.1 mg/kg IV/IM/IO/IN	
--	--

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol	
--	--

	TAMU EMRC-EMS	FEVER	
	Standard Delegated Orders – Pediatric Medical	PM 07	Page 247
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Evidence of determinable source for sepsis ▪ Physical Findings: – AMS – Weakness – Temperature > 101 degrees F	– Use of full PPE is recommended
---	--

Assessment:

▪ Medical Assessment
--

First Responder and EMT Basic:

▪ O₂ via most appropriate method ▪ Acetaminophen PO – refer to dosing chart (15 mg/kg) ▪ External cooling	Refer to Heat Related Emergency protocol Remove patient's clothing Apply cold packs to axillary and groin regions Avoid excessive cooling
--	---

EMT Intermediate:

▪ Vascular Access ▪ Fluid Bolus – May repeat x 2
--

Paramedic:

▪ Same as above	For persistent shivering or active seizures, refer to Seizure protocol
---	---

Consult:

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol
--

	TAMU EMRC-EMS	NON-TRAUMATIC ABDOMINAL PAIN	
	Standard Delegated Orders – Pediatric Medical	PM 08	Page 248
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Medical etiology ▪ Physical Findings: – Abdominal pain with rebound tenderness, increased pain on palpation, increased pain on movement	– Females of reproductive age who complain of abdominal pain are managed with the OB Abdominal Pain protocol – Abdominal pain secondary to trauma is managed with the Multi-System trauma protocol
---	---

Assessment:

▪ Medical Assessment
--

First Responder and EMT Basic:

▪ O₂ via most appropriate method

EMT Intermediate:

▪ Vascular Access ▪ Fluid Bolus – If hypotensive and/or signs of hypoperfusion – May repeat x 2 ▪ Zofran oral disintegrating tablet (ODT) PO – Weight 8kg-30kg 4mg ODT PO – Weight >30kg 8mg ODT PO – May be repeated every 15 min ▪
--

Paramedic:

▪ Promethazine 0.5 mg/kg IV/IO/IM – For N/V – May be repeated x 1 if N/V persists after 15 minutes ▪ Pain Management ▪ Repeat Fluid Bolus	Patients who experience abdominal pain secondary to trauma are NOT candidates for pain medications.
---	---

Consult:

Critical Points:

▪ Any changes in patient condition, refer to the appropriate protocol
--

	TAMU EMRC-EMS	NON-TRAUMATIC HEMORRHAGE	
	Standard Delegated Orders – Pediatric Medical	PM 09	Page 249
<u>TOC</u>			

Criteria and History:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – Medical etiology ▪ Physical Findings: <ul style="list-style-type: none"> – Hypovolemia secondary to blood loss due to medical etiology – “Coffee grounds” emesis – Blood in stool – Epistaxis | Consider all possible causes <ul style="list-style-type: none"> – Abdominal aortic aneurysm (AAA) – Ulcers/Diverticulitis/GI bleed |
|---|--|

Assessment:

- Medical Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Consider Trendelenburg

EMT Intermediate:

- Vascular Access
- Fluid Bolus x 2 q 5 minutes
 - Discontinue if pulmonary edema develops

Paramedic:

- Same as above

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	NON-TRAUMATIC SHOCK / HYPOTENSION	
	Standard Delegated Orders – Pediatric Medical	PM 10	Page 250
<u>TOC</u>			

Criteria and History:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Historical Findings: <ul style="list-style-type: none"> – No evidence of blood loss or trauma ▪ Physical Findings: <ul style="list-style-type: none"> – Hemodynamically unstable – AMS – Sepsis – Tachycardia | Evidence of sepsis can include any of the following: <ul style="list-style-type: none"> ▪ Fever ▪ Recent wound or surgery ▪ Recent URI/UTI symptoms ▪ Urinary catheter ▪ Petechia or rash |
|---|--|

Assessment:

- Medical Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Consider Trendelenburg

EMT Intermediate:

- Vascular Access
 - Do Not delay transport to accomplish
- Fluid Bolus
 - May repeat x 2

Paramedic:

- Epinephrine Infusion 0.1 – 1 mcg/kg/min
 - 0.6 multiplied by the child's weight in kg. This amount (in mg) is then added to enough IV solution to equal a total volume of 100 ml.
 - Infuse at **20 ml/hr** until clinical response (increased heart rate **OR** blood pressure **OR** improved systemic perfusion)
 - Reduce infusion **to 0.1 to 1 mcg/kg/minute**
 - 10 ml/hr equals 1 mcg/kg/minute
- Consider need for PAI
- Dopamine 2 – 20 mcg/kg/min

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	OVERDOSE / POISONING	
	Standard Delegated Orders – Pediatric Medical	PM 11	Page 251
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Known or suspected ingestion or injection of pharmacologic substance, whether intentional or accidental
 - Ingestion, inhalation or absorption of potentially harmful non-pharmaceutical substance
- **Physical Findings:**
 - Lethargy, Altered Mental Status, combative, unresponsive

Assessment:

- | | |
|----------------------|---------------------------------------|
| ▪ Medical Assessment | Poison Control: 1-800-222-1222 |
|----------------------|---------------------------------------|

First Responder and EMT Basic:

- | | |
|---|--|
| ▪ O ₂ via most appropriate method
▪ Consider contacting Poison Control | 100% O ₂ for Carbon monoxide
Consider Hyperbaric Therapy |
|---|--|

EMT Intermediate:

- | | |
|---|--|
| ▪ Vascular Access
▪ Naloxone 0.1 mg/kg IV/IO/IN <ul style="list-style-type: none"> – Max single dose 2 mg – Repeat every 2 – 3 minutes ▪ Charcoal PO if oral Overdose <ul style="list-style-type: none"> – 1 g/kg if < 1 yr. old – 25 – 50 g if age 1 – 12 yr. – May mix with juice or water | <ul style="list-style-type: none"> – Do Not administer Naloxone if patient is intubated ▪ Contact Poison Control for information related to signs and symptoms of a particular overdose as well as recommended treatment modalities. ▪ Activated charcoal is not indicated in overdose involving alkalis, strong acids, petroleum products or alcohols. |
|---|--|
-

	TAMU EMRC-EMS	OVERDOSE / POISONING	
	Standard Delegated Orders – Pediatric Medical	PM 11	Page 252
<u>TOC</u>			

Paramedic:

- Sodium Bicarbonate 0.5 – 1 mEq/kg IV/IO
 - For Tricyclic anti-depressant (TCA) overdose with widened QRS complexes > 0.12 sec
 - Infant 0-1 year receive 4.2% Sodium Bicarbonate
 - Child 1 – 8 year receive 8.4% Sodium Bicarbonate
 - For ethylene glycol ingestion (antifreeze, De-icing agents, detergents, paints)
- Atropine 0.02 mg/kg IV/IM/IO
 - For OGP poisoning with parasympathetic symptoms
 - Repeat q 5 as needed
- Consider consult with physician at receiving facility

Tricyclic Antidepressants include:

- Elavil
- Amitriptyline
- Imipramine
- Doxepin
- Nortriptyline

Calcium Channel Blockers include:

- Amlodipine
- Diltiazem
- Nifedipine
- Verapamil

Beta Blockers include:

- Atenolol
- Metoprolol
- Propranolol
- Corgard
- Inderal
- Lopressor
- Tenormin
- Trandate

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	SEIZURES	
	Standard Delegated Orders – Pediatric Medical	PM 12	Page 253
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of seizures
 - Head trauma
 - New onset
 - **Physical Findings:**
 - *Post-ictal*
Witnessed, reported or suspected seizure prior to EMS arrival
 - *Active*
Actively seizing patient upon EMS arrival
-

Assessment:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Medical Assessment | Consider possible causes: <ul style="list-style-type: none"> – Head trauma – Febrile – Epilepsy – Overdose – Withdrawals – Hypoglycemia – Unknown etiology |
|--|---|
-

First Responder and EMT Basic:

- | | |
|---|------------------------------------|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ External cooling, if febrile ▪ Protect patient from potential hazards and objects in case of active seizure | For Fever, refer to Fever protocol |
|---|------------------------------------|
-

EMT Intermediate:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Vascular Access <ul style="list-style-type: none"> – If prolonged post-ictal state – If need for IV/IO meds – Do Not delay transport to accomplish ▪ Naloxone 0.1 mg/kg IV/IO/IN <ul style="list-style-type: none"> – Max single dose of 2 mg – Repeat every 2 – 3 minutes | Do Not administer Naloxone if patient is intubated |
|--|--|
-

	TAMU EMRC-EMS	SEIZURES	
	Standard Delegated Orders – Pediatric Medical	PM 12	Page 254
<u>TOC</u>			

Paramedic:

- Midazolam 0.1 mg/kg IV/IM/IO/IN for ACTIVE seizures
 - Max. dose 5 mg – if patient < 2 years
 - Max. dose 10 mg – if patient > 10 years
- OR**
- Diazepam 0.2 – 0.3 mg/kg IV/IO for ACTIVE seizures
- Diazepam 0.4 – 0.6 mg/kg PR for ACTIVE seizures and unable to establish IV
- PAI
 - For status seizures
 - See Pediatric PAI Procedure

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

- Additional Midazolam 0.1 mg/kg IV/IM/IO/IN
- Additional Diazepam 0.2 – 0.3 mg/kg IV/IO
- Additional Diazepam 0.4 – 0.6 mg/kg PR if unable to establish IV

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	SYNCOPE	
	Standard Delegated Orders – Pediatric Medical	PM 13	Page 255
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of loss of consciousness
- **Physical Findings:**
 - Common “faint” (vasovagal syncope)
 - Postural “faint” (orthostatic syncope)
 - Hyperventilation syncope

Assessment:

- Medical Assessment
- Orthostatic Vital Signs

First Responder and EMT Basic:

- O₂ via most appropriate method
- Once you have completed a patient assessment, and a cause of syncope has been determined, refer to the appropriate protocol

EMT Intermediate:

- Vascular Access

Paramedic:

- Same as above

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

PEDIATRIC RESPIRATORY



	TAMU EMRC-EMS	RESPIRATORY ASSESSMENT	
	Standard Delegated Orders – Pediatric Respiratory	PR 01	Page 257
<u>TOC</u>			

Criteria and History:

▪ Historical Findings: – Use of inhaled medications, steroids – Fever – Productive cough – Recent surgery ▪ Physical Findings: – Dyspnea, tachypnea – Cyanosis – Edema – Wheezing, rales, rhonchi, absent/decreased breath sounds, stridor – Use of accessory muscles, grunting – Chest pain – Bronchoconstriction	Consider all possible cases and refer to appropriate protocol: – Pulmonary Embolism – Anxiety – Asthma – Airway obstruction – Pneumonia – Pneumothorax – Allergic reaction – Aspiration
--	---

Assessment:

- C.A.B.C.
- Secondary Assessment
- Vital Signs (orthostatic)
- ECG 3-Lead and 12-Lead if appropriate
 - Right sided 12-Lead if indicated
- Blood glucose
- Temperature
- Lung sounds
- GCS
- OPQRST
- ASPN
- SAMPLE
- Capnography
- Mallampati score

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

▪ Refer to appropriate protocol for treatment based on assessments ▪ Any changes in patient condition, refer to appropriate protocol

	TAMU EMRC-EMS	AIRWAY OBSTRUCTION	
	Standard Delegated Orders – Pediatric Respiratory	PR 02	Page 258
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent event
- **Physical Findings:**
 - Partial or complete airway obstruction
 - Secondary to foreign body aspiration
 - Decreased LOC
 - Cyanosis
 - Obvious inadequate air exchange

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Abdominal/chest thrusts <ul style="list-style-type: none"> – If patient is conscious ▪ O₂ via most appropriate method | <u>Responsive Infant:</u> Back blows and chest thrusts
<u>Responsive Child:</u> Abdominal (Heimlich) thrusts |
|---|---|

EMT Intermediate:

- Direct laryngoscopy and removal of foreign object with Magill forceps or suction
 - If patient is unconscious and there is a complete obstruction
- Vascular Access

Paramedic:

- Consider surgical airway if obstruction is not relieved by other means

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	BRONCHOSPASM	
	Standard Delegated Orders – Pediatric Respiratory	PR 03	Page 259
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of asthma
- **Physical Findings:**
 - Dyspnea with wheezing or prolonged expiratory phase

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Albuterol 2.5 mg/3 ml via Nebulizer
 - May repeat x 2 in 15 minutes

EMT Intermediate:

- Vascular Access
 - Fluid Bolus
-

	TAMU EMRC-EMS	BRONCHOSPASM	
	Standard Delegated Orders – Pediatric Respiratory	PR 03	Page 260
<u>TOC</u>			

Paramedic:

- Methylprednisolone 2mg/kg IV/IO
- Epinephrine 1:1,000 0.01 mg/kg (0.01ml/kg) SQ
 - For severe dyspnea or near respiratory failure
 - Max single dose 0.3 mg
- Repeat Epinephrine 1:1,000) 0.01 mg/kg (0.01 ml/kg) SQ
 - If no relief of dyspnea
- Consider PAI
 - See Pediatric PAI Procedure

*Methylprednisolone
Dosing Chart*

Weight (kg)	Dose (mg)	Volume (ml)
5	10	0.2
10	20	0.3
15	30	0.5
20	40	0.6
25	50	0.8
30	60	1.0
35	70	1.1
40	80	1.3
45	90	1.4
50	100	1.6
55	110	1.8
60	120	1.9

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible

Class II: soft palate, fauces and uvula visible

Class III: soft palate, base of uvula visible

Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol

	TAMU EMRC-EMS	CROUP	
	Standard Delegated Orders – Pediatric Respiratory	PR 04	Page 261
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of recent upper respiratory illness
- **Physical Findings:**
 - Difficulty breathing with barking cough
 - Dyspnea
 - Inspiratory stridor
 - Recent history or current symptoms of URI
 - **Croup is a viral infection usually seen in children 18 months – 3 years of age**

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ Albuterol 2.5 mg/3 ml by nebulizer <ul style="list-style-type: none"> – For mild/moderate dyspnea – May repeat x 2 in 15 minutes | <ul style="list-style-type: none"> ▪ It is IMPERATIVE that oxygen administration not result in increased agitation. Allow parent to assist with administration. |
|--|--|

EMT Intermediate:

- Vascular Access
- Fluid Bolus

Paramedic:

- Methylprednisolone 2 mg/kg IV

*Methylprednisolone
Dosing Chart*

Weight (kg)	Dose (mg)	Volume (ml)
5	10	0.2
10	20	0.3
15	30	0.5
20	40	0.6
25	50	0.8
30	60	1.0
35	70	1.1
40	80	1.3
45	90	1.4
50	100	1.6
55	110	1.8
60	120	1.9

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	EPIGLOTTITIS	
	Standard Delegated Orders – Pediatric Respiratory	PR 05	Page 262
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of recent upper respiratory illness
- **Physical Findings:**
 - Dyspnea
 - Evidence of upper airway obstruction (inspiratory stridor, drooling, or hoarseness)
- **Any one or more of the following:**
 - Fever
 - Recent history of URI symptoms
 - Dysphasia or severe sore throat
 - Drooling
 - **Epiglottitis is a bacterial infection often seen in children 3 – 7 years of age**

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ TRANSPORT ASAP in a position of comfort, usually sitting upright | <ul style="list-style-type: none"> ▪ It is IMPERATIVE that oxygen administration not result in increased agitation. Allow parent to assist with administration. |
|--|--|

EMT Intermediate:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Vascular Access ▪ Fluid Bolus | <ul style="list-style-type: none"> ▪ DO NOT attempt an IV or airway manipulation unless COMPLETE airway obstruction occurs ▪ Pre-oxygenate patient with BVM and 100% Oxygen prior to intubation attempt |
|--|---|

Paramedic:

- Same as above

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	PNEUMONIA	
	Standard Delegated Orders – Pediatric Respiratory	PR 06	Page 263
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent upper respiratory illness
- **Physical Findings:**
 - Fever
 - Productive cough
 - Wheezing, rhonchi or rales

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- | | |
|--|------------------------------------|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ Albuterol 2.5 mg/3 ml via Nebulizer <ul style="list-style-type: none"> – May repeat x 2 in 15 minutes | For Fever, refer to Fever protocol |
|--|------------------------------------|

EMT Intermediate:

- Vascular Access
- Fluid Bolus

Paramedic:

- PAI if appropriate
 - See Pediatric PAI Procedure

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
Class II: soft palate, fauces and uvula visible
Class III: soft palate, base of uvula visible
Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol
-

	TAMU EMRC-EMS	RESPIRATORY DISTRESS	
	Standard Delegated Orders – Pediatric Respiratory	PR 07	Page 264
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - New onset
 - Pre-existing condition
- **Physical Findings:**
 - Dyspnea without a clear etiology
 - Increased respiratory effort

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ Albuterol 2.5 mg/3 ml by nebulizer <ul style="list-style-type: none"> – For mild/moderate dyspnea | If no beneficial response seen with Albuterol, consider other causes and treatment |
|--|--|

EMT Intermediate:

- Vascular Access

Paramedic:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ May repeat Albuterol 2.5 mg / 3ml via nebulizer if beneficial response seen ▪ PAI if appropriate <ul style="list-style-type: none"> – See Pediatric PAI Procedure | <p><u>Mallampati Classification</u>
 Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible</p> <p><u>ET Tube Confirmation</u>
 – Confirm with 5 methods as per procedure</p> <p><u>Capnometry Reference:</u>
 – EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg</p> |
|--|---|

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol
-

	TAMU EMRC-EMS	RESPIRATORY FAILURE / SHOCK	
	Standard Delegated Orders – Pediatric Respiratory	PR 08	Page 265
TOC			

Criteria and History:

- **Historical Findings:**
 - No evidence of blood loss or trauma
 - **Physical Findings:**
 - Failure to oxygenate or ventilate or both
- Respiratory Failure:*
- Dyspnea (Tachypnea or Bradypnea, accessory muscle use)
 - Cyanosis or
 - Agitation / Obtundation
 - Nasal Flaring
 - Grunting
- Shock:*
- Apathy and listlessness
 - Diminished peripheral pulses
 - Prolonged capillary refill
 - Cool, pale, or mottled skin
- Doesn't respond to parents or painful stimuli

Assessment:

- Respiratory Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
 - **Do Not** delay transport to accomplish
- Fluid Bolus
 - May repeat x 2 unless pulmonary edema develops

If narcotic overdose is suspected, see Overdose / Poisoning Protocol

	TAMU EMRC-EMS	RESPIRATORY FAILURE / SHOCK	
	Standard Delegated Orders – Pediatric Respiratory	PR 08	Page 266
<u>TOC</u>			

Paramedic:

- PAI if appropriate
 - See Pediatric PAI Procedure
- Chest Decompression
 - If pneumothorax suspected

If narcotic overdose is suspected, see Overdose / Poisoning Protocol

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible

Class II: soft palate, fauces and uvula visible

Class III: soft palate, base of uvula visible

Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol

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PEDIATRIC TRAUMA



	TAMU EMRC-EMS	TRAUMA ASSESSMENT	
	Standard Delegated Orders – Pediatric Trauma	PT 01	Page 269
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - History of recent trauma
 - MOI indicative of trauma
- **Physical Findings:**
 - Evidence of trauma

Assessment:

- C.A.B.C.
- Physical exam
 - Focused or rapid trauma assessment
- Secondary Assessment
- Vital Signs
- ECG 3-Lead and 12-Lead if appropriate
 - Right sided 12-Lead if indicated
- Blood glucose
- Temperature
- Lung sounds
- GCS
- OPQRST
- ASPN
- SAMPLE
- Pediatric Trauma Score

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

Critical Points:

- **Refer to appropriate protocol for treatment based on assessments**
 - Any changes in patient condition, refer to the appropriate protocol
 - Refer to destination criteria guidelines for appropriate facility.
-

	TAMU EMRC-EMS	AMPUTATION	
	Standard Delegated Orders – Pediatric Trauma	PT 02	Page 270
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
 - **Physical Findings:**
 - A severed part that is completely separated from the body
-

Assessment:

- Trauma Assessment
-

First Responder and EMT Basic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ Control hemorrhage ▪ Splint any associated fracture or dislocation ▪ Rinse amputated part with sterile water, place in a bag and keep cool. DO NOT: <ul style="list-style-type: none"> – Soak in water – Cover with wet gauze or towels – Place directly on ice | <u>To care for amputated part:</u> <ul style="list-style-type: none"> – Rinse with sterile water – Place in a bag – Keep cool but do not place directly on ice |
|--|--|
-

EMT Intermediate:

- Vascular Access
 - Fluid Bolus if severe blood loss has occurred
 - Zofran oral disintegrating tablet (ODT) PO
 - Weight 8kg-30kg 4mg ODT PO
 - Weight >30kg 8mg ODT PO
 - May be repeated every 15 min
-

Paramedic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Promethazine 0.5 mg/kg IV/IO/IM <ul style="list-style-type: none"> – For N/V – May repeat x 1 if nausea/vomiting persists after 15 minutes – Maximum single dose 12.5 mg ▪ Pain Management ▪ Consider Air Medical Provider (AMP) | Consider pressure points or tourniquet if hemorrhage cannot be controlled by direct pressure

Consider use of Air Medical Provider (AMP) |
|--|--|
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	BURNS	
	Standard Delegated Orders – Pediatric Trauma	PT 03	Page 271
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
- **Physical Findings:**

Tissue injury from direct contact with:

 - Heat source
 - Chemical reaction
 - Inhalation
 - Electrical / lightning contact

Inhalation Injuries/Burns with any one of the following:

 - Singed nasal hairs or oral mucosa
 - Erythema of the palate, soot in the mouth, larynx or sputum
 - Rapid, shallow ventilation with tachypnea > 40 AND decreased mental status
 - Respiratory rate < 8
 - Mechanical airway obstruction from trauma, edema, or laryngospasm
 - Signs of respiratory distress such as nasal flaring, respiratory crowing or stridor, anxiety, agitation, or combativeness
 - Edema associated with a burn of the face or neck
 - Unconsciousness

Assessment:

- | | |
|---------------------|----------------------------------|
| ▪ Trauma Assessment | Rule of Nines: refer to appendix |
|---------------------|----------------------------------|

First Responder and EMT Basic:

- | | |
|---|---|
| ▪ Remove the burn source
▪ O ₂ via most appropriate method
▪ Treat Underlying Injuries
▪ Dress burns as follows: <ul style="list-style-type: none"> – TBSA < 15% use burn gel – TBSA > 15% use dry sterile dressing or burn sheet ▪ All other injuries should be treated en-route to the hospital if feasible | <ul style="list-style-type: none"> – Remove jewelry and restricting clothing – Brush off any powdered chemical – Irrigate chemical burn site with water, if appropriate to chemical – Keep the patient warm after removing burn source and possibly contaminated clothing |
|---|---|

EMT Intermediate:

- | | |
|---|--|
| ▪ Vascular Access
▪ Intubation for respiratory burns | Parkland Burn Formula <ul style="list-style-type: none"> – V (fluids volume)= TBSA of burn (%) x weight (kg) x 4 |
|---|--|
-

	TAMU EMRC-EMS	BURNS	
	Standard Delegated Orders – Pediatric Trauma	PT 03	Page 272
<u>TOC</u>			

Paramedic:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Pain Management ▪ PAI for respiratory burns <ul style="list-style-type: none"> – If needed for intubation ▪ CONSIDER Air Medical Provider (AMP) | <ul style="list-style-type: none"> – Do not administer MS to patients with severe respiratory burns unless airway is secured – Keep the patient warm after removing burn source and possibly contaminated clothing <p><u>Mallampati Classification</u>
 Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible</p> <p><u>ET Tube Confirmation</u>
 – Confirm with 5 methods as per procedure</p> <p><u>Capnometry Reference:</u>
 – EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg</p> |
|--|--|

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
 - **Appropriate Destination: UTMB or Hermann Hospital**
 - For inhalation / hands / face / genitals;
 - >30% TBSA 2nd degree and/or higher; of <12 and > 65 years of age
-

	TAMU EMRC-EMS	EVISCERATION	
	Standard Delegated Orders – Pediatric Trauma	PT 04	Page 273
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
 - **Physical Findings:**
 - Protrusion of internal organs through a wound
-

Assessment:

- Trauma Assessment
-

First Responder and EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Spinal motion restriction if indicated ▪ O₂ via most appropriate method ▪ Occlude wound with a sterile, moist dressing and bandage | <p>Never attempt to replace protruding organs back into the body cavity.</p> |
|---|--|
-

EMT Intermediate:

- Vascular Access
-

Paramedic:

- Pain Management
-

Consult:

- Additional Pain Management
-

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	EYE INJURY	
	Standard Delegated Orders – Pediatric Trauma	PT 05	Page 274
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Decreased or loss of vision
 - Mechanism of injury
- **Physical Findings:**
 - Injury to the globe, open or closed, including:
 - o Corneal abrasion
 - o Foreign body in eye
 - o Chemical burn
 - o Lacerated or avulsed globe
 - o “Arc” burn of globe
 - Excessive tearing and burning of the eyes, nasal drainage, salivation

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- Spinal motion restriction if indicated
- Dress and bandage wound as appropriate
- IF chemical burn / CS or OC spray:
 - Flush continuously with copious amounts of water or NS
- IF open injury to globe:
 - Shield both eyes
- IF corneal abrasion, arc burn, or foreign body:
 - Remove foreign body if globe not penetrated
 - Shield affected eye

EMT Intermediate:

- Vascular Access
 - If severe pain or nausea and/or vomiting present and able to accomplish without increasing Intraocular pressure
 - Zofran oral disintegrating tablet (ODT) PO
 - Weight 8kg-30kg 4mg ODT PO
 - Weight >30kg 8mg ODT PO
 - May be repeated every 15 min
-

	TAMU EMRC-EMS	EYE INJURY	
	Standard Delegated Orders – Pediatric Trauma	PT 05	Page 275
<u>TOC</u>			

Paramedic:

- IF corneal abrasion, arc burn, or foreign body:
 - Tetracaine 1 – 2 gtt in affected eye, Repeat as needed
 - Remove foreign body if globe not penetrated
 - Shield affected eye
 - Pain Management
 - Promethazine 0.5 mg/kg IV/IO/IM
 - For N/V
 - May be repeated x 1 if N/V persists after 15 minutes
 - Maximum single dose 12.5 mg
-

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	HEAD TRAUMA	
	Standard Delegated Orders – Pediatric Trauma	PT 06	Page 276
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Recent event
 - Mechanism of injury
- **Physical Findings:**
 - Altered mental status
 - Loss of consciousness

Assessment:

- Trauma Assessment

Glasgow Coma Scale

Eye Response	Verbal Response	Motor Response
4 Spontaneous	5 Oriented	6 Obeys
3 To verbal	4 Confused	5 Localizes
2 To pain	3 Inappropriate	4 Withdraws
1 No response	2 Incomprehensible	3 Flexion
	1 No response	2 Extension
		1 No Response

First Responder and EMT Basic:

- Spinal Motion Restriction
- O₂ via most appropriate method
- Helmet Removal
 - For airway management if clinically indicated

Helmet Removal

Maintain neutral alignment with padding as needed after removal

EMT Intermediate:

- Inline intubation, if needed
- Vascular Access
- Fluid Bolus
 - Repeat x 1

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

If patient is hypotensive, look for and treat other injuries as well

	TAMU EMRC-EMS	HEAD TRAUMA	
	Standard Delegated Orders – Pediatric Trauma	PT 06	Page 277
<u>TOC</u>			

Paramedic:

- PAI if appropriate
 - See Pediatric PAI Procedure
- Consider Air Medical Provider (AMP)

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

Consult:

Critical Points:

- Rapid transport to appropriate facility is crucial
 - **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	MULTI-SYSTEM TRAUMA	
	Standard Delegated Orders – Pediatric Trauma	PT 07	Page 278
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
- **Physical Findings:**
 - Injury to the chest, abdomen or pelvis
 - Multiple soft-tissue or musculoskeletal injuries

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- Spinal Motion Restriction
- O₂ via most appropriate method
- Occlude open chest wounds

EMT Intermediate:

- Inline intubation, if needed
- Vascular Access
 - Enroute
 - Consider Blood-Y
- Fluid Bolus
 - Repeat as needed unless pulmonary edema develops

Inline Intubation

- Limit 2 attempts then use Combitube

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Paramedic:

- Chest Decompression as needed
- PAI if appropriate
 - See Pediatric PAI Procedure
- Consider Air Medical Provider (AMP)
- Fentanyl only from Pain Management

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	MUSCULOSKELETAL – SOFT TISSUE INJURY	
	Standard Delegated Orders – Pediatric Trauma	PT 08	Page 279
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
- **Physical Findings:**
 - Pain on palpation or movement
 - Ecchymosis, swelling, deformity

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ O₂ via most appropriate method ▪ Spinal motion restriction ▪ Control hemorrhage ▪ Splint ▪ Cooling of injury site ▪ Fracture reduction by inline traction if no pulse is detected and if it is a closed fracture <ul style="list-style-type: none"> – One attempt only – If still no pulse, splint in position | <p>Check PMS before and after applying splint</p> |
|---|---|

EMT Intermediate:

- Vascular Access if:
 - Open fracture
 - Femur fracture
 - Pelvic fracture/Hip dislocation
 - Signs of hypotension and/or hypoperfusion
- Zofran oral disintegrating tablet (ODT) PO
 - Weight 8kg-30kg 4mg ODT PO
 - Weight >30kg 8mg ODT PO
 - May be repeated every 15 min

Paramedic:

- C-Spine clearance
- Pain Management
- Promethazine 0.5 mg/kg IV/IO/IM
 - For N/V
 - May be repeated x 1 if N/V persists after 15 minutes
 - Maximum single dose 12.5 mg

Consult:

- Additional Pain Management

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**

	TAMU EMRC-EMS	PENETRATING INJURY	
	Standard Delegated Orders – Pediatric Trauma	PT 09	Page 280
<u>TOC</u>			

Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
 - Note ballistics
- **Physical Findings:**
 - A penetrating injury to any body part
 - Entrance / exit wounds

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- O₂ via most appropriate method
- Occlude chest wounds
- Control hemorrhage
- Spinal Motion Restriction
- Stabilize impaled objects
- Bandage and dress open wounds

EMT Intermediate:

- Vascular Access

Paramedic:

- Chest decompression as needed
- Pain Management

Consult:

- Additional Pain Management

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

	TAMU EMRC-EMS	SEXUAL ASSAULT	
	Standard Delegated Orders – Pediatric Trauma	PT 10	Page 281
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Criteria and History:

- **Historical Findings:**
 - Report of recent sexual assault
- **Physical Findings:**
 - Signs of assault or injury

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Assure scene and personal safety ▪ Provide emotional support ▪ O₂ via most appropriate method ▪ Treat underlying injuries | <p>Do not let patient bathe or change clothing. If law enforcement is not on scene, collect any pertinent items in a paper bag, if available. Any blankets or sheets used by or on patient during transport should accompany patient into the receiving facility.</p> <p>If a paper bag is not available, an unused biohazard bag may be substituted to hold clothing or other items during transport but must not be tied or sealed, as a closed plastic environment may damage or destroy evidence. All items collected should be transported with the patient and transferred to law enforcement custody as soon as possible. It is imperative that integrity of the chain of evidence be maintained at all times.</p> <p>In the event of hostile family or caregivers, avoid confrontations that might interfere with removing patient from the environment.</p> |
|---|--|

EMT Intermediate:

- Same as above

Paramedic:

- Same as above

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
 - Refer to appropriate protocol for specific injuries or conditions.
-

	TAMU EMRC-EMS	SPINAL TRAUMA	
	Standard Delegated Orders – Pediatric Trauma	PT 11	Page 282
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Criteria and History:

- **Historical Findings:**
 - Mechanism of injury
- **Physical Findings:**
 - Presence of decreased neurological function below site of injury
 - Loss of sensation
 - Inability to move
 - Hypotension

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- Spinal Motion Restriction
- O₂ via most appropriate method

EMT Intermediate:

- Vascular Access
 - Fluid Bolus if neurogenic shock is present or anticipated
 - Repeat x 2 if no signs of pulmonary edema

Paramedic:

- PAI if appropriate
 - See Pediatric PAI Procedure
- Consider Air Medical Provider (AMP)

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

Consult:

Critical Points:

- Any changes in patient condition, refer to the appropriate protocol
 - Transport to appropriate facility
-

	TAMU EMRC-EMS	TRAUMATIC ARREST	
	Standard Delegated Orders – Pediatric Trauma	PT 12	Page 283
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Criteria and History:

- **Historical Findings:**
 - Underlying multi-system trauma
 - Surgical problem
- **Physical Findings:**
 - Multi-system trauma
 - Pulseless
 - Apneic
- **ECG Findings:**
 - Any non-perfusing rhythm

Assessment:

- Trauma Assessment

First Responder and EMT Basic:

- CPR
 - BVM ventilation with 100% O₂
 - Maintain open airway with OPA
- Spinal Motion Restriction
- Application of AED
- Occlude open chest wounds
- All other injuries should be treated en-route to the hospital if feasible

EMT Intermediate:

- Inline intubation
- Vascular Access
 - Fluid Bolus
 - Repeat as needed unless pulmonary edema develops

Mallampati Classification

Class I: soft palate, fauces, uvula, pillars visible
 Class II: soft palate, fauces and uvula visible
 Class III: soft palate, base of uvula visible
 Class IV: soft palate not visible

ET Tube Confirmation

- Confirm with 5 methods as per procedure

Capnometry Reference:

- EtCO₂ readings consistently > 0 indicate tube is not in the esophagus. Verify the placement is not right mainstem. In the cardiac arrest, through quality CPR and controlled ventilation, attempt to maintain EtCO₂ levels as close to 35 – 45 mmHg as possible. Values under 15 mmHg indicate poor survivability. Unsuccessful: 0 mmHg

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Paramedic:

- Chest Decompression
 - If signs/symptoms of tension pneumothorax
- Dysrhythmia treatment per specific protocol
- PAI if needed to intubate
 - See Pediatric PAI Procedure

Pediatric patients **ARE NOT** candidates for Trauma Termination

Consult:

Critical Points:

- **Any changes in patient condition, refer to the appropriate protocol**
-

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PROCEDURES



	TAMU EMRC-EMS	12 LEAD ECG MONITORING	
	Standard Delegated Orders – Procedures	PROC 01	Page 287
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General:

Prehospital 12-lead electrocardiograms (ECG) benefit patient care by alerting receiving physicians to potential fibrinolytic candidates, by decreasing the time to in-hospital fibrinolytic administration, and by providing a baseline ECG for comparison.

Indications:

Patients presenting with:

- Chest pain or pressure of presumed cardiac etiology, and/or
- Shortness of breath of presumed cardiac etiology

Contraindications:

- Unstable patients
- Patients who have been subjected to trauma (relative)

Precautions:

- Obtaining a baseline 12-Lead ECG is **preferred** before treatment is initiated. However, **Do Not** significantly delay treatment and/or transport to conduct test.
- When placing electrodes on female patients, always place leads V3 – V6 **under** the breast rather than on the breast.
- Never use the nipples as reference points for electrode location as nipple locations may vary widely.

Procedure:

1. Whenever possible, attempt to obtain 12-Lead with patient in supine position.
2. If patient does not tolerate, place in semi-reclining or sitting position.
3. Input patient name, sex and age. Leave ECG size preset at x 1. (Do Not compromise patient care to input this information).
4. Prep the skin and shave hair as necessary.
5. Apply electrodes as follows and attach the appropriate lead to each electrode:

Limb Leads: Extremities

(RA) Right arm
(RL) Right leg
(LA) Left arm
(LL) Left leg

Precordial Leads: Chest

V1 – Fourth intercostal space to the right of the sternum
V2 – Fourth intercostal space to the left of the sternum
V3 – Directly between leads V2 and V4
V4 – Fifth intercostal space at midclavicular line
V5 – Level with V4 at anterior axillary line
V6 – Level with V5 at midaxillary line

6. Attempt to obtain the 12-Lead while the vehicle is not moving.
7. Ask the patient to remain motionless for about 20 seconds.
8. Acquire the 12-Lead ECG report.
9. If the ECG report detected noise (e.g., patient motion or a disconnected electrode) take appropriate action and re-acquire the 12-Lead ECG.

Considerations:

Chest Lead Positioning:

- *Locating the V1 position (fourth intercostal space) is critically important because it is the reference point for locating the placement of remaining V leads. To locate the V1 position:*

	TAMU EMRC-EMS	12 LEAD ECG MONITORING	
	Standard Delegated Orders – Procedures	PROC 01	Page 288
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- Place your finger at the notch in the top of the sternum.
- Move your fingers slowly downward about 1.5 inches until you feel a slight horizontal ridge or elevation. This is the “angle of Louis” where the manubrium joins the body of the sternum.
- Locate the second intercostal space on the right side, lateral to and just below the angle of Louis.
- Move your finger down two more intercostal spaces to the fourth intercostal space, which is the V1 position.

Right Sided 12-Leads:

- When a 12-Lead is obtained with ST and T wave changes that are highly suggestive of Inferior wall involvement, move Chest Leads V-3, V-4, V-5, V-6 to the exact location on the R side of the patient’s chest.
- When documenting on the ECG strip, add “R side” to each lead that was moved.

	TAMU EMRC-EMS	ADENOSINE ADMINISTRATION	
	Standard Delegated Orders – Procedures	PROC 02	Page 289
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Indication:

- SVT
- Undifferentiated tachycardia as specified in the SDO

Contraindication:

- Sick-sinus syndrome (except in the presence of a functioning artificial pacemaker)
- Second or third degree heart block

Equipment:

- A total of 24 mg of Adenosine for an adult patient or 15 mg for a pediatric patient
- 2 – 3 ml syringes
- 2 – 5 ml (or 10 ml) syringes
- 3 – 10 ml syringes
- ECG monitoring
- 18 ga syringe needle
- 10 ml sterile NS
- Oxygen
- IV start kit
- IV catheters – 16 ga – 18 ga or use largest bore possible
- Tape or securing device

Procedure:

1. Verify cardiac rhythm and patient status indicating adenosine administration.
2. Ensure that patient is on ECG monitor and is receiving O₂.
3. Establish two IV's (see appropriate procedures):
 - Saline lock, no more distal than the antecubital fossa
 - NS infusion TKO
4. Draw up 12 mg of Adenosine in 3 ml syringe or 1 – 12 mg pre-filled syringe.
5. Draw up 10 ml NS in another syringe in 10 ml syringe.
6. Instruct patient that they feel a short period of chest heaviness, chest pain, SOB, etc.
7. Prepare injection lock with alcohol or iodine.
8. Begin continuous recording of ECG.
9. **Rapidly** push the Adenosine through the saline lock.
10. **Immediately** flush with 10 ml of NS (should be placed in same port as the Adenosine)
11. If no conversion in exactly two minutes, repeat sets # 4 – 10 once.
12. If the patient becomes hypotensive, support with positioning and a fluid bolus.
13. Record ECG for entire medication administration sequence.
14. Re-evaluate vital signs and patient status after Adenosine administration.

	TAMU EMRC-EMS	BASIC AIRWAY MANAGEMENT	
	Standard Delegated Orders – Procedures	PROC 03	Page 290
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General:

Conscious patients with a patent airway should be placed in position of comfort consistent with their illness or injury.

Patients with compromised airway should be managed in a manner consistent with their illness or injury.

Procedure for Establishing and Maintaining an Airway:

1. Open patient's airway using the appropriate technique for the patient's condition.
 - Medical patient: Head tilt-Chin lift or Head tilt-Jaw thrust
 - Trauma patient: Modified Jaw thrust (jaw thrust with neutral neck alignment)
2. The patient's airway should be maintained and secured using the appropriate airway device
 - Oropharyngeal Airways should be used in unconscious patients or patients without a gag reflex.
 - Nasopharyngeal Airways are better tolerated in conscious patients or in the presence of a gag reflex.
 - o **Do not** use in small infants. Bleeding may occur in children with large adenoids.
 - o **Do not** force. **Always** use lubricant
 - If necessary refer to individual advanced airway procedures.

Procedure for Suctioning the Airway:

1. Turn patient to side if possible, maintaining spinal immobilization in trauma patient.
2. Suction the oropharynx with a large bore rigid or flexible catheter.
3. Suction the lower airway with a flexible catheter down the ET tube and utilize a sterile technique.
4. Limit to 10 – 15 sec. at a time. Suctioning may cause bradycardia.
5. Hyperventilate patient prior to and in between procedure if possible.

Procedure for Airway Obstruction:

The following techniques for management of obstructed airway apply to adults as well as children and infants with the following exceptions in infants:

- Five back blows followed by five chest thrusts are to be used – **No Abdominal thrusts.**
- Finger sweep should only occur if foreign body is visualized. Blind finger sweeps are **NOT** performed in infants.

Complete Airway Obstruction:

1. Reposition the airway (jaw thrust or head-tilt/chin-lift).
2. Foreign body maneuvers as indicated.
 - Infant: 5 back blows, 5 chest thrusts.
 - Child / Adult: 5 Abdominal thrusts (supine position).
 - If the patient is still conscious perform the Heimlich maneuver.

	TAMU EMRC-EMS	BASIC AIRWAY MANAGEMENT	
	Standard Delegated Orders – Procedures	PROC 03	Page 291
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3. *In the event abdominal thrusts are unsuccessful at removing the obstruction and the patient's airway remains completely obstructed:*
 - Insert a laryngoscope gently into the oropharynx to visualize any foreign body.
 - If a foreign body can be visualized, magill forceps may be used to assist in removal of the foreign body.
4. If the obstruction is not relieved:
 - Proceed to needle cricothyroidotomy as outlined in the appropriate procedure.
5. When the obstruction is relieved:
 - Apply high flow oxygen per airway/oxygenation procedure.
 - Assess the adequacy of ventilations and support as needed.
 - Consider intubation if appropriate.
 - Suction aggressively. Vomiting and aspiration commonly occur after relief of an airway obstruction. Be prepared to quickly and aggressively suction the patient.

Partial Airway Obstruction:

1. Have patient assume a position of comfort, unless risk of spinal injury, then immobilization is indicated.
2. Apply high flow O₂ at 10 to 15 lpm by a non-rebreather mask.
3. Suction upper airway secretions as appropriate.
4. As long as the patient is moving air or coughing, no attempts should be made to relieve a partial airway obstruction.
5. Abdominal thrusts will not be effective and may be injurious to the patient who is still moving air.
6. If patient demonstrates evidence of deterioration (change in mental status, inability to ventilate), treat as complete airway obstruction.

Pediatric Considerations

Anatomic and Physiologic Features Unique to Children:

1. Large tongues which may occlude the airway and are difficult to sweep away during intubation.
2. Small airway diameter. Minimal edema and swelling may obstruct the airway.
3. Short trachea that predisposes for extubation during transport or head extension.
4. Anterior larynx which often makes intubation difficult. Cricoid pressure should aid in visualization.
5. Infants have large heads that cause a sniffing position. These patients may require a towel roll under their backs to correct airway position.
6. The epiglottis is soft and "U" or omega shaped.
7. The smallest diameter of the airway is at the cricoid ring, below the cords. This is why uncuffed ET tubes are used in small children.
8. The pediatric airway approaches the size of an adult airway at 8 or 9 years of age.
9. Infants are obligate nose breathers until 2 – 6 months of age.
10. The diaphragm is the main muscle used for breathing in infants due to the undeveloped intercostal muscles. This may cause inflated stomachs secondary to crying.

	TAMU EMRC-EMS	BLOOD DRAW REQUEST BY TEXAS J.P.	
	Standard Delegated Orders – Procedures	PROC 04	Page 292
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General:

1. Per HB 3775 of the State of Texas, a **Justice of the Peace** in the State of Texas can order a paramedic to draw blood for the purpose of determining the alcohol content or the presence of chemical substances. **This bill became effective 09/01/99.**
2. A certified paramedic acting at the request of a Justice of the Peace shall not incur any civil or criminal liability as a result of the blood draw.
3. If, for any reason, a TAMU paramedic feels uncomfortable performing this procedure, he/she should contact a Supervisor immediately. If a supervisor is unavailable, ask EMS Communications to contact one of the following individuals via paging or telephone:
 - o EMS Manager
 - o EMS – Chief
 - o Assistant Chief
 - o Assistant Chief – Clinical
 - o Any off-duty Supervisor immediately available

Procedure:

1. Blood draw should be done under the supervision of the requesting Justice of the Peace.
2. Use the blood draw kit as supplied by the Justice of the Peace.
3. Don appropriate personal protective equipment.
4. Cleanse the venipuncture site using povidone-iodine prep pad from the kit. **Do not use alcohol preps**-this will alter the accuracy of the test results.
5. Make venipuncture with an 18 or 20 ga catheter.
6. Withdraw blood into two (2) gray top tubes using the needleless vacutainer equipment.
7. Slowly invert the tubes at least 5 times to assure proper mixing of the blood and the anticoagulant powder. The paramedic should write his initials, date and time on the tube before handing the tubes to the Justice of the Peace.
8. Discontinue the I.V. unless otherwise indicated.
9. The paramedic who drew the blood sample should sign any required forms or labels and observe the blood tubes being sealed by the officer.
10. If not already done, an incident number should be generated from EMS dispatch office.
11. Accurate and thorough documentation of the circumstances and events should be recorded including the **name of the JP and Peace Officer** requesting procedure, site of the blood draw, time performed and time the blood sample was released to the Peace Officer.
12. Have the Officer or other authorized individual sign as having received the blood sample to **document chain of custody** after being drawn by EMS. This documentation is important so that the integrity of the blood draw by TAMU-EMS is not in question.
13. Include **documentation of site preparation** as well as **use of Betadine or povidone** solutions. This documentation is important in the event the procedure and/or outcome of the test results are challenged in a court of law.

	TAMU EMRC-EMS	BLOOD GLUCOSE ANALYSIS	
	Standard Delegated Orders – Procedures	PROC 05	Page 293
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General:

Treat patient per appropriate Treatment SDO. Se the Adult Medical and Pediatric Hypoglycemia and Hyperglycemia SDO's.

Indications:

Patients with a known history of hypoglycemia or diabetes mellitus.

Any patient presenting with altered mental status or other signs/symptoms of hypo/hyperglycemia, including:

- Tremors
- Weakness
- Nausea
- Abdominal Pain
- Unconscious/unresponsive

Procedure:

1. Gather and prepare equipment.
2. Don appropriate protective gear.
3. Wipe pad of finger with alcohol prep.
4. Allow alcohol to air dry, or wipe dry with gauze.
5. Stick finger with the lancet device and press finger to form a small drop of blood.
 - Blood samples can be obtained from site used to establish an intravenous access, or from a separate venipuncture site.
6. Touch and hold the Test End (tip) of the Test Strip to the drop of blood until after the meter “beeps.”
7. Blood will automatically be drawn into the Test Strip and the timer will begin to count down from “30” seconds.
8. After “30” seconds the blood glucose result will appear in the display window.
9. Document the glucometer reading and treat the patient as indicated by the analysis and protocol.
 - If “Hi” appears, your BGL may be above 600 mg/dl.
 - If “Lo” appears, your BGL may be below 20 mg/dl.
10. Repeat glucose analysis as indicated for reassessment after treatment and as per protocol.
11. Dispose of the used Glucolet device in the sharps container. Remove the Test Strip from the Glucometer and dispose in biohazard bag.

Considerations:

- It is imperative that the Glucometer is calibrated correctly with the appropriate control code.
- In the event that the control code is different from the regent strip code, a false reading may be displayed.

	TAMU EMRC-EMS	CHEST DECOMPRESSION	
	Standard Delegated Orders – Procedures	PROC 06	Page 294
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General:

Tension Pneumothorax is a life threatening condition. Decompressing the chest is considered potentially life saving and may be performed on any patient found in cardiac arrest or multi-system trauma **WITH** signs of hemodynamic instability (Hypotension and/or falling systolic blood pressure, Narrowing pulse pressure), **AND one or more** of the following indications.

Indications:

- Increased respiratory difficulty / increased difficulty in bagging
- Sudden decrease in level of consciousness
- Loss of peripheral pulses
- Pale and/or cyanotic with diaphoretic skin
- Diminished or Absent unilateral breath sounds
- Distended neck veins
- Tracheal deviation (often a late sign)
- Pulseless electrical activity
- Subcutaneous Emphysema

Equipment:

- Cook Pneumothorax Kit or other appropriate equipment including:
- 10, 12, 14 or 16 ga over-the-needle catheters
- Number 10 or 11 scalpel
- Heimlich valve or Rubber glove (for flutter valve)
- 10 ml syringe
- Betadine swabs
- Dressing and tape
- Stethoscope
- ECG monitoring supplies and equipment
- Oxygen
- Appropriate ventilation equipment

Precautions:

- Crepitus and/or subcutaneous air may be present with a tension pneumothorax.
- Always insert needle over (cephalic) rib to avoid neurovascular bundle.

Complications:

- Creation of a Pneumothorax if not already present
- Laceration of blood vessels and/or nerves
- Laceration of lung
- Infection due to poor aseptic technique

Procedure:

1. Don appropriate personal protective gear **including** eyewear, mask, and gloves.
2. Evaluate and maintain the airway, provide oxygenation and support ventilations.
3. Assemble and prepare equipment.
4. Attach appropriate size needle to 10 ml syringe
 - In adults, use a 10 ga needle or largest available
 - In children < 12 years, use a 14 ga needle

	TAMU EMRC-EMS	CHEST DECOMPRESSION	
	Standard Delegated Orders – Procedures	PROC 06	Page 295
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ON THE AFFECTED SIDE:

5. Identify intercostal space at mid-clavicular line, between the 2nd and 3rd ribs (Alternatively, the fifth intercostal space at mid-axillary line may be used).
6. Swab with Betadine at midclavicular line.
7. Position the tip of the needle just over the top of the 3rd rib at the midclavicular line. Insert needle into the chest at 45° angle to the chest wall and parallel to sternum. At the pleural cavity a slight “give” is felt. Advance further into chest until bevel of needle clears the pleura.
8. Advance the catheter over the needle and then remove needle.
9. If decompression occurs a rush of air may be heard.
10. Connect Heimlich valve tubing, making sure to pay attention to proper flow direction of the valve.
11. Secure catheter to chest.
12. Catheter may be connected to **LOW** suction intermittently to assist evacuation of pneumothorax.

SPECIAL NOTES:

- Individuals who have chronic COPD may have a spontaneous pneumothorax that progresses to a tension pneumothorax.
- A tension pneumothorax may be precipitated by the occlusion of an open chest wound dressing.
- Rush of air and/or patient improvement indicates correct placement.
- If the patient has sustained multi-system trauma, bilateral decompression may be required.
- **Once the needle is placed, Prehospital personnel should not remove it.** If the needle has been improperly placed, tape the needle to the patient's chest and repeat the procedure.
- **Remember** to go just above the rib due to all of the major structures (arteries, veins, and nerves) which lie below the rib. The closer you stay to the top of the rib, the less chance of complication.

	TAMU EMRC-EMS	COMBITUBE	
	Standard Delegated Orders – Procedures	PROC 07	Page 296
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Indications:

- In an apneic patient when endotracheal intubation is unsuccessful
- Patient $\geq$ 5 feet tall
- Patient should be unconscious

Contraindications:

- Responsive patients with an intact gag reflex
- Patients with known esophageal disease
- Patients who have ingested caustic substances
- Patients under 5 feet tall

Complications:

- Blue pilot is inflated but air is heard leaking from the mouth. Insert up to 20 ml of additional air in #1 blue pilot.
- Both pilots are inflated but chest does not rise and no air is heard when ventilating in either tube. Deflate cuffs and withdraw airway 1 – 2 cm; re-inflate cuffs and repeat steps as listed in the procedure.
- Pilot bulbs do not remain inflated. Remove airway.

Equipment:

- Combitube
- KY Jelly or other water soluble lubricant
- Securing device
- Syringe 20 ml
- Syringe 100 ml
- Suction apparatus
- Bag valve mask with oxygen source
- Bulb device
- End-tidal CO₂ detector, or other approved device

Procedure:

1. **Personal protective equipment including gloves, eye protection and mask.**
2. Prepare, position, and oxygenate patient.
3. Provide suction as necessary.
4. Test cuffs by inflating 100 ml and 15 ml of air into the cuffs of the Combitube. The cuffs are labeled with the correct amount of air for each cuff.
5. Hyperoxygenate for 30 seconds prior to insertion.
6. Assure c-spine stabilization if necessary.
7. Place patient's head in a neutral position.
8. Lubricate Combitube generously with water-soluble lubricant.
9. Perform tongue-jaw lift.
10. Insert Combitube until the teeth are aligned between the two black lines. Avoid cuff contact with teeth. Limit placement attempt to 30 seconds.
11. Inflate proximal cuff (blue pilot).
12. Inflate distal cuff (white pilot)

	TAMU EMRC-EMS	COMBITUBE	
	Standard Delegated Orders – Procedures	PROC 07	Page 297
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13. Ventilate through the blue #1 tube. Listen for epigastric and lung sounds. Watch for chest rise. Utilize bulb check and EtCO₂ detector to confirm tube placement.
14. If no chest rise is noted, inappropriate air sounds are heard, or bulb check remains deflated, ventilate through clear #2 tube and confirm tube placement with EtCO₂ detector.
15. Gastric suctioning may be done by inserting a French suction catheter into #2 tube while continuing to ventilate through #1 blue tube.
16. Gastric suctioning is not possible through #1 blue tube.

	TAMU EMRC-EMS	C-SPINE CLEARANCE	
	Standard Delegated Orders – Procedures	PROC 08	Page 298
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Indication for C-Spine Clearance in Pre-hospital Setting

To be performed by or at the direction of the In-Charge Paramedic ONLY

All patients that are candidates for pre-hospital C-Spine clearance by TAMU-EMS personnel **SHOULD** meet **ALL** of the following criteria:

1. Patient > 6 years of age
2. NO Altered mental status and/or decreased level of consciousness
3. NO Suspected alcohol intoxication and/or drug abuse
4. NO Presence of neurological deficit or complaint
5. NO Presence of C-Spine pain and/or point tenderness
6. NO Distracting injuries of any kind (e.g., long bone fractures, abdominal pain, chest pain, crushing injuries, extensive BSA burns, etc.)
7. NO Language barrier between Paramedic and patient
8. NO Strong evidence of potential spinal injury based on mechanism of injury (e.g., high-speed rollover MVC, diving accident, fall > 20 feet, etc.)
9. NO Pain with voluntary range of motion

Any patient that fails to meet **ANY ONE** of the above criteria **SHOULD** receive C-Spine Restriction **prior** to transport by TAMU-EMS personnel.

Note: If at anytime the paramedic feels uncomfortable clearing the c-spine, the patient should be fully immobilized.

	TAMU EMRC-EMS	END TIDAL CO ₂ DETECTION	
	Standard Delegated Orders – Procedures	PROC 09	Page 299
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General:

Capnometry involves the continuous measurement of carbon dioxide concentrations (CO₂) in respiratory gasses of mechanically ventilated patients. Capnometry reflects CO₂ elimination.

Indications:

Indicated to verify and maintain tracheal intubation.

Procedure:

- Endotracheally intubate the patient
- Attach End-Tidal CO₂ detector to endotracheal tube
- Note color change on each respiratory failure or cardiac arrest patient
 - **More Purple: Less CO₂**
 - **More Yellow: More CO₂**
- The CO₂ detector shall remain in place with the airway and monitored throughout the prehospital care and transport.
- *Tube placement should be verified frequently and always with each patient move or loss of color change in the End-Tidal CO₂ detector.*

Contraindications:

There are no absolute contraindications to capnometry in mechanically ventilated patients if the data obtained is evaluated in conjunction with other diagnostic tests and the patient's overall clinical condition.

Considerations:

- It is important to note that although the capnometry provides valuable information about correct tube placement and the efficiency of ventilation, it is not a replacement or a substitute for a complete respiratory assessment.
- **Low or absent cardiac output may negate its use for placement verification.**
- *Certain situations may affect the reliability of the capnometer. The extent to which the reliability is affected varies somewhat among types of devices.*
- The infrared spectrum of CO₂ has some similarities to the spectra for both oxygen and nitrous oxide. High concentrations of either or both oxygen or nitrous oxide may affect the capnometer results. Other gases which could cause false readings: Helium and Freon.

Note:

Contamination of the monitor by secretions or condensate, a sample tube of excessive length, a **sampling rate that is too high**, obstruction or decreased perfusion of the sampling chamber may lead to unreliable results.

	TAMU EMRC-EMS	ET INTRODUCER DEVICE	
	Standard Delegated Orders – Procedures	PROC 10	Page 300
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Indication:

Difficult intubation with a restricted view of the glottic opening

Contraindications:

Pediatric patients under the age of 14

Equipment:

- ET introducer device
- Laryngoscope
- ET Tube
- Suction

Procedure:

1. Ensure patient is well oxygenated prior to procedure
2. Don personal protective equipment
3. Prepare suction
4. Prepare ET Tube for insertion without stylette
5. Prepare ET introducer device for insertion by curving the bougie and ensuring the distal tip is formed into a J shape
6. Perform laryngoscopy, obtaining the best possible view of the glottic opening
7. Advance the bougie, continually observing its distal tip, with the concavity facing anteriorly
8. Visualize the tip of the bougie passing posteriorly to the epiglottis where possible, and anterior to the arytenoids cartilages

As the tip of the bougie enters the glottic opening you should either feel 'clicks' as it passes over the tracheal rings or the tip will rest against the wall of the airway (hold-up). This is a good indicator of correct insertion, but is not 100% accurate. Failure to elicit clicks or hold-up is indicative of esophageal placement. If hold-up is felt, the bougie should be withdrawn approximately 5 cm to avoid the ET tube impacting against the carina.

9. Pass the ET tube over the proximal end of the bougie and through the glottic opening, limiting movement of the bougie as much as possible.
10. Hold the ET tube securely in place and remove the bougie.
11. Secure and verify tube placement according to orotracheal intubation procedure.

	TAMU EMRC-EMS	EXTERNAL PACING	
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Assessment Requirements:

- ABC's
- Pulse oximetry
- ECG monitoring

Required Treatments:

- This assumes that Zoll has already been turned on and is in “Monitor” mode
- Connect ECG electrodes to patient cable and attach electrodes to patient
- Remove hair, clean and dry areas over which Multifunction Electrode Pads (aka, combo-pads) will be placed
- Connect combo-pads to multi-function Defibrillation/Cardioversion/Pacing Cable on Zoll
- Peel off protective covering from combo-pads to expose conductive surface and position pads on patient according to manufacturers recommended placement location on outer package
- Rotate selector dial to “Pacer”
- Adjust “Pacer Rate ppm” dial to 80 bpm or higher
- Observe oscilloscope for “Sense” marker which should appear on each QRS complex
- Observe oscilloscope for pacer marker
- Adjust “Pacer Output mA” until electrical pacer wave is followed immediately by QRS complex
- Evaluate for concordance of mechanical pulse with electrical pulse through multiple methods
 1. Manually evaluate pulse
 2. Evaluate blood pressure
 3. Select Wave 2 on Zoll to SpO₂ waveform and determine if there is a corresponding waveform for each paced QRS complex.
- Depressing the “4:1” button will hold four pacer beats to determine underlying rhythm.
- You can switch to “Monitor”, “Defib”, and back to “Pacer” and retain the original pacer settings as long as the Zoll has not been powered off for greater than 5 seconds. When doing this, ALWAYS re-verify pacer settings.

Notes:

- Monitoring should be done through 4 lead cables.
- Defibrillation may be performed as usual while pacing the patient by switching the selector to “Defib”

	TAMU EMRC-EMS	HELMET REMOVAL	
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General:

In the event that an individual is injured while wearing a protective helmet, the primary assessment should proceed as always with concern for assessing airway, breathing, and circulation while addressing the potential for cervical spine injury.

- The goal is to appropriately treat the patient in terms of cervical spine immobilization and manage the patient's airway.

Procedure:

The decision whether to remove a helmet or not to remove a helmet should be based on the following criteria:

Tight-Fitting Helmets:

1. If the patient is awake and able to protect his/her airway, it is generally preferable to leave the helmet in place using the helmet to assist with immobilization.
2. If the airway cannot be controlled for any reason with the helmet in place, the helmet should immediately be removed while maintaining in-line immobilization.
3. If the patient has an altered level of consciousness and/or is unable to protect his/her airway, the face shield should be immediately removed to allow access to the airway. If the face shield cannot easily be removed, the helmet should be removed while maintaining in-line immobilization.

Loose-Fitting Helmets:

1. If the patient is wearing a **loose helmet** that does not conform closely to his/her head, the helmet **should be removed using in-line immobilization prior** to completing the spinal immobilization on the patient.
2. The void behind the Occiput created by the helmet and any other protective sports equipment should be filled during the spinal immobilization procedure.

Considerations:

- When immobilizing patients with the helmet in place, the backboard portion of most immobilization devices may cause the neck to flex forward when the patient's head is placed on it. For that reason, **head immobilization devices should generally not be used** in these patients. The **helmet** should rest **directly on the backboard** with towel rolls used to provide lateral support to the helmet.
- EMS crews should work closely with team trainers and physicians for organized team sports. When providing scheduled standbys at sporting events, EMS personnel should introduce themselves to the sports medicine personnel of the teams prior to the game.

	TAMU EMRC-EMS	INTUBATION	
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INTUBATION – OROTRACHEAL

Indications:

Any patient unable to maintain the patency of their airway, requiring mechanical ventilation and/or PEEP

Patients with possible increasing ICP

Contraindications:

Presence of gag reflex (consider appropriate methods of airway management or PAI)

Equipment:

- Endotracheal tube(s) of appropriate size
- Stylette for ET tubes
- Laryngoscope handle and batteries
- Laryngoscope blades of the appropriate sizes and desired type
- Bag valve mask, complete
- KY Jelly or other lubricant
- Securing device
- Syringe 10 ml
- Suction apparatus
- Stethoscope
- Bulb Check
- End-tidal CO₂ detector, or other approved device
- Oxygen

Procedure:

1. Don personal protective equipment (gloves, eye protection, etc.)
2. Manually establish or secure the airway and oxygenate the patient
3. Chose proper ET tube (and stylette, if used)
4. Position patient's head as appropriate (neutral if c-spine injury suspected, otherwise "sniffing" position). See "Making Best Attempt"
5. Remove mask and oral airway
6. Insert laryngoscope blade, moving tongue to the left and lifting epiglottis
7. Visualize glottis and vocal cords
8. Visualize tube passing through glottic opening
9. Advance tube until cuff is just past the cords. STOP advancing
10. Confirm placement with a Bulb Detector
11. Check for presence of breath sounds in left and right chest, and absence of breath sounds in abdomen
- 12. If you are unsure of placement, remove tube and hyperventilate patient with bag-valve mask**
13. Once proper placement verified inflate cuff with 5 to 10 ml of air and insert oropharyngeal airway or other bit block
14. Secure the tube to the patient's head
15. Apply end-tidal CO₂ detector and monitor expired CO₂
16. Reassess airway and breath sounds each time after moving the patient

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17. Consider placing an NG tube to clear stomach contents after the airway is secured with an ET tube
18. Consider **immobilization** of patient's head with a **c-collar or other device** to maintain tube position
RECONFIRM tube placement often, **ESPECIALLY AFTER** moving patient or manipulating ET tube

INTUBATION – NASOTRACHEAL

Indications:

- Comatose patients with spontaneous respirations
- Conscious patient with severe hypoxia
- Oral cavity not sufficiently accessible to permit orotracheal intubation
- Wired jaws
- Trismus
- Active seizing

Contraindications:

- Apneic patient
- Facial trauma (blunt or penetrating)
- Penetrating neck wounds
- Nasal or Nasopharyngeal obstruction from deviated septum
- Basilar skull fracture
- Hypertension
- Suspected CVA

Complications:

- Nasal Bleeding
- Tube malposition in the:
 - o Vallecula
 - o Pyriform fossa
 - o Esophagus
- Laryngospasm
- Retropharyngeal laceration

Equipment:

- Endotracheal tube
- KY Jelly or other water soluble lubricant
- Securing device
- Syringe 10 ml
- Suction apparatus
- Bag valve mask with oxygen source
- Bulb Device
- End-tidal CO2 detector, or other approved device

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Procedure:

1. **Don personal protective equipment** including **gloves, eye protection, and mask**
2. Prepare, position, and oxygenate patient
3. Choose proper ET tube about 1 mm less than for oral intubation
4. Lubricate ET tube generously with water soluble lubricant
5. Pass the tube in the largest nostril with the beveled edge against the nasal septum and perpendicular to the facial plate
6. Use forward and lateral back and forth rotational motion to advance the tube. **Never** force the tube
7. Pause at the level of the pharynx so gag is minimal and breath sounds are audible through the tube
8. Apply firm, gentle cricoid pressure and advance the tube quickly past the vocal cords during inspiration
9. Confirm placement with a Bulb device
10. Check for presence of breath sounds in the left and right chest, and absence of breath sounds in the abdomen
11. **If you are unsure of placement, remove tube and hyperventilate patient with bag-valve-mask**
12. Once proper placement is verified inflate cuff with 5 to 10 ml of air
13. Secure the tube to the patient's head
14. Apply end tidal carbon dioxide detector and monitor expired CO₂
15. Reassess airway and breath sounds after movement
16. Consider immobilization of patient's head to maintain tube position with c-collar or other immobilization device. If able, consider placing an NG tube to clear stomach contents after the airway is secured with an ET tube. **Transport should not be delayed** to place an NG tube

Considerations:

- If the patient is conscious, he or she should receive step by step instructions before and during the procedure
- *Patient should be positioned in either sitting position or supine to align the mouth, pharynx and the larynx*
- *This is done by placing the patient in sniffing position, and by placing a folded towel at the base of the patient's neck*
- **However, if cervical spine injury is suspected, the head and neck should be maintained in neutral position**

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INTUBATION – DIGITAL

Indication:

Unable to orally or nasally intubate

Contraindications:

Conscious and responsive patient
Patient with intact gag or clenched jaw

Equipment:

- Endotracheal tube
- KY Jelly or other lubricant
- Securing device
- Syringe 10 ml
- Suction apparatus
- Bag valve mask with oxygen source
- Bulb device
- End-tidal CO2 detector, or other approved device

Procedure:

1. Prepare equipment including suction
2. Ensure patient is well oxygenated by hyperventilation
3. Don personal protective equipment
4. Maintain trauma patient in neutral position with manual stabilization throughout procedure
5. Insert index and middle finger to palpate and elevate epiglottis
6. Pass distal end of the ET tube between the index and middle finger and advance tube
7. Confirm placement with a Bulb device
8. Check for presence of breath sounds in left and right chest, and absence of breath sounds in abdomen
9. **If you are unsure of placement, remove tube and hyperventilate patient with bag-valve-mask**
10. Once proper placement verified inflate cuff with 5 to 10 ml of air and insert oropharyngeal airway or other bite block
11. Secure the tube to the patient's head
12. Apply end tidal carbon dioxide detector and monitor expired CO₂
13. Reassess airway and breath sounds after movement
14. Consider placing an NG tube to clear stomach contents after the airway is secured with an ET tube. **DO NOT** delay transport to accomplish placement of an NG tube
15. Consider immobilization of patient's head with c-collar or other device to maintain tube position

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INTUBATION – STOMAL

Indications:

Pre-existing tracheotomy **with** any of the following:

- o Respiratory Arrest
- o Hypoventilation

Contraindications:

None when used in the emergency setting

Equipment:

- Endotracheal tube
- KY Jelly or other lubricant
- Securing device
- Syringe 10 ml
- Suction apparatus
- Bag valve mask with oxygen source
- Bulb check
- Stethoscope
- End-tidal CO₂ detector, or other approved device

Procedure:

1. Assemble the equipment while continuing ventilation with BVM
2. Chose the tube size (Note: if the stoma is constricted you may need to use a smaller size tube; 6mm or 7mm)
3. Position patient
4. Insert the tube through the stoma
5. Advance the tube until the cuff is just inside the stoma. Insert air into the cuff to prevent air leak
6. Confirm placement with a Bulb device
7. Check for presence of breath sounds in left and right chest, and absence of breath sounds in abdomen
8. **If you are unsure of placement, remove tube and hyperventilate patient with BVM device and supplemental oxygen**
9. Once proper placement has been verified, inflate cuff with 5 to 10 ml of air
10. Secure the tube to the patient's neck and head
11. Apply end-tidal CO₂ detector and monitor expired CO₂
12. Reassess airway and breath sounds each time after moving patient
13. Consider placing an NG tube to clear stomach contents after the airway is secured with an ET tube
14. The ET tube DOES NOT need to be modified in any way

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CONTINUOUS INTRAVENOUS MEDICATION INFUSION

General:

Any medication that should be administered via IV infusion as indicated by manufacturer and/or protocol

Equipment:

- All equipment as noted for intravenous access
- Medication and IV fluid for infusion (as specified in protocol or Drug Reference)
- 18 g syringe needle or needleless adapter
- 60 gtts/ml IV drip chamber and tubing

Procedure: Continuous Drip

1. Explain the procedure to the patient and inquire for medication allergies
2. Don appropriate personal protective equipment
3. Pre-mixed intravenous medications are selected or appropriate dose of medication is added to intravenous fluid bag. Affix label to fluid container. Shake be to distribute medication
4. Attach 60 gtts/ml drip chamber and tubing. Flush air from tubing and attach needleless adapter to end of tubing.
5. Insert needleless adapter into IV injection port (use port closest to patient)
6. Begin medication infusion. Check for patency (indicated by good flow and absence of infiltration)
7. Once patency is established, set infusion rate
8. Monitor patient during transport for consistency and patency of IV/medication line

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ENDOTRACHEAL MEDICATION ADMINISTRATION

General:

Critical patient requiring rapid administration of potentially life-saving medications in which vascular access cannot be established in a timely manner and endotracheal intubation has been successfully accomplished

Indications for Administration:

Administration of ET medications as per SDO

The medications that may be given down the ET tube are:

- Lidocaine
- Epinephrine
- Atropine
- Naloxone (Narcan)

Equipment:

- All equipment as noted in the Endotracheal Intubation Procedure
- Medications, appropriate syringes, and syringe needles
- If medication not diluted, 10 ml NS for dilution

Procedure:

Note: All medications administered via the ET tube are doubled

1. Endotracheal intubation with confirmation of tube placement
2. Draw up medication or prepare pre-filled syringe for use
3. Reconfirm tube placement by auscultation
4. Hyperventilate patient for 30 seconds
5. Rapidly inject the medication down the tube in a bolus that is diluted or followed by normal saline to flush the tube. The total fluid that should be administered in one bolus is 10 ml maximum
6. Hyperventilate the patient for at least 30 seconds following medication administration

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INTRAMUSCULAR MEDICATION ADMINISTRATION

General:

- Medications requiring Intramuscular administration

Equipment:

- Appropriate size syringe
- 18 ga syringe needle or needleless system (to draw up medication)
- 20 – 22 ga syringe needle (medication administration)
- Alcohol preps
- Band-Aid

Procedure:

1. Explain the procedure to the patient and inquire about medication allergies
2. Medication is prepared in syringe of less than 5 ml with needle 18-22 ga, 1 ½ - 2 inches. 0.2 ml of air may be added to syringe
3. Site is selected and cleansed (deltoid, dorsal gluteal, ventro-gluteal)
4. Spread skin taut, insert needle at 90-degree angle, and aspirate
5. If no blood appears in syringe, inject medication slowly
6. Withdraw the needle and massage the site with alcohol prep or 4x4
7. Dispose of syringe in sharps container
8. Place a Band-Aid over the injection site

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INTRAVENOUS MEDICATION ADMINISTRATION

General:

Any patient requiring medications via the intravenous route:

Indications for Administration:

**Prior to any pre-hospital medications being administered All of the following should be present:*

1. Appropriate patient assessment has determined the need for a medication
2. Patient is interviewed for known allergies and medication history to identify risk of drug interaction or potentiation
3. The on-scene pre-hospital provider is familiar with:
 - Guideline for administration
 - Actions
 - Side-effects
 - Drug interaction
 - Contraindications
4. Medication is checked for:
 - Expiration date
 - Clarity

Equipment:

- All equipment and supplies as noted for intravenous access
- Syringe(s) of appropriate size(s) for medication dose
- 18 syringe needles or needleless syringe cannulas
- Alcohol preps

Procedure: IV Bolus

1. Establish vascular access
2. Explain the procedure to the patient and inquire about medication allergies
3. Don appropriate personal protective equipment
4. Medication is prepared in syringe with luer-lock connector or protected-needle. (A needle to insert into a port should only be used as a last resort)
5. All air is cleared from syringe and excess medication expelled
6. Site is cleansed and syringe is inserted into capped port of IV line
7. Patency of IV is checked by aspirating blood or by monitoring flow with no signs of infiltration
8. IV line is clamped or flow is controlled to flush medication, as medication is pushed into IV port
9. Time taken to administer medication is specific to medication. Flush IV line to assure medication administration
10. Monitor IV catheter site for signs of infiltration
11. Dispose of syringe in appropriate container

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NEBULIZED MEDICATION ADMINISTRATION

Indicated:

- Dyspnea with evidence of bronchospasm (wheezes, silence), due to asthma or COPD
- Patient **SHOULD** be alert and have adequate respiratory effort to inspire mist

Contraindicated:

- Severely obtunded or unconscious patient
Note: Nebulized medications have little therapeutic effect when given to patient with little or no tidal volume

CHF/Pulmonary Edema

Note: Patients with suspected Pulmonary Edema may be given **Nebulized Albuterol** treatments but **should not** be given Nebulized Atrovent. Consider **Morphine** for **moderate to severe** respiratory distress and/or prior to PAI

Equipment:

- Medication for nebulizer
- Oxygen-driven nebulizer
- Oxygen

Procedure:

1. Self-administered by the patient with a metered dose inhaler (MDI), hand-held nebulizer or nebulized with positive-pressure breathing device such as a bag-valve-mask or with an in-line device attached to the ET tube
2. Avoid contamination of equipment. If contamination occurs, replace contaminated equipment prior to use
3. Medication is measured and introduced into nebulizer and 6 – 10 liters of oxygen is attached to nebulizer
4. Informs patient of need for treatment. Inquires about medication allergies
5. Patient is instructed to breathe normally and to hold a deep inspiration every 4 – 5 breaths
6. Treatment is continued until all medication is gone or is discontinued due to complication in patient condition
 - o Ectopy noted on ECG
 - o Heart rate increases by more than 20 bpm

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ORAL MEDICATION ADMINISTRATION

General:

Patient assessment indicated administration of oral medications for optimal patient care and outcome

Oral medications currently administered by TAMU prehospital personnel are:

- ASA 324 mg
- Diphenhydramine
- Ibuprofen
- Oral Glucose
- Nitroglycerin
- Charcoal

Equipment:

- No special equipment required

Procedure:

1. Inquire about medication allergies
2. Don appropriate personal protective equipment
3. Prepare medication for administration. Prior to administration, check for:
 - Expiration date
 - Name of medication being administered to ensure medication chosen is correct
4. Obtain permission from patient to administer medication. Advise the patient what to expect after medication has been administered (e.g., Nitro may cause headache but should relieve chest pain, etc.)
5. Provide medications to patient **with direction** on the administration (i.e.: to be chewed, swallowed, held under tongue)

Note: Oral medications **Should Not** be administered to patients with decreased and/or altered levels of consciousness

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RECTAL MEDICATION ADMINISTRATION

Indicated:

Any patient in status seizures requiring medication administration when an IV cannot be established

Consider administration of IM Midazolam **BEFORE** rectal administration of Diazepam

Contraindicated:

- Respiratory insufficiency
- Hypotension

Equipment:

- A # 6 – 8 fr suction catheter
- Diazepam
- 2 – 5 ml syringe
- Tape
- Lubricant

Procedure:

1. Carefully restrain patient manually in knee-chest or supine position
2. Assure airway patency and administer supplemental oxygen
3. Don personal protective equipment
4. Draw up the calculated dose of Diazepam: 0.4 – 0.6 mg/kg pediatric **OR** 4 – 20 mg adult
5. Draw up 5 ml NS in the second syringe
6. Have assistant hold legs apart
7. Attach a # 6-8 fr suction catheter to the end of a syringe that contains medication to be administered
8. Lubricate the tip of the catheter
9. Gently insert catheter into rectum and instill medication
10. Flush the suction catheter with 5 ml of NS
11. Optional-withdraw the catheter
12. If the catheter is withdrawn, tape the buttocks closed
13. Use manual pressure to facilitate drug retention
14. Monitor patient for respiratory depression, hypotension or any other change in status

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SUBCUTANEOUS MEDICATION ADMINISTRATION

General:

Any medication requiring subcutaneous administration
 SQ injections are not recommended for patients with poor perfusion (shock)

Equipment:

- Appropriate size syringe
- 18 ga syringe needle or needleless cannula (to draw up medication)
- 25 ga syringe needle
- Alcohol preps
- Band-Aid

Procedure:

1. Medication is prepared in syringe of 1 ml or less with needle 25-27 ga 1/2 - 5/8 "
2. Explain the procedure to the patient and inquire about medication allergies
3. A site is selected and cleansed. Use the lateral aspect of the upper arm or leg
4. Pinch skin up into a fat fold of at least 1"
5. Insert needle at 45-degree angle
6. Aspirate the syringe
7. If no blood appears in syringe, inject medication slowly
8. Withdraw the needle and gently massage site with alcohol wipe or 4x4
9. Dispose of syringe in sharps container
10. Place a Band-Aid over the injection site

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INTRANASAL MEDICATION ADMINISTRATION

Indications:

- Medication administration when IV access is not obtainable or undesirable. To provide an alternative method for needleless medications delivery.

Contraindications:

- Facial trauma
- Epistaxis
- Nasal congestion or discharge
- Recent nasal surgery
- Recent cocaine use
- Increased mucous production
- NG or NT tube in place
- Any other recognized nasal mucosal abnormality

Procedure:

1. Patient should be in a recumbent or supine position. If the patient is sitting, compress the nares with a gloved finger for 1-2 minutes after administration
2. Draw up medication into a 1 ml or 3 ml syringe with luer-lock tip
3. Expel any air within the syringe
4. Attach the Mucosal Atomization Device (MAD) to the syringe and confirm that it is secured firmly to the syringe
5. Visually inspect nares and chose the largest nare or the one with the least obstruction
6. Insert syringe with the MAD attached into the nares until resistance is met (approximately 1.5 cm)
7. Timing the respirations, depress plunger rapidly after patient exhalation but before inhalation
8. The MAD is reusable on the same patient, dispose after each patient

Precautions and Comments:

- No more than 1 ml of medication should be administered per nostril
- No more than 0.5 ml of medication should be administered per nostril for children under 10 years
- May repeat administration q 5 minutes

	TAMU EMRC-EMS	NASOGASTRIC TUBE INSERTION AND LAVAGE	
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Indications:

Nasogastric lavage may be performed on conscious or unconscious patients in any of the following situations:

1. Patients who have ingested non-caustic poisons or excessive amounts of medications
2. Cardiac arrest patients for the purpose of alleviating abdominal distention
3. Hyperthermic patients to lower body temperature

Contraindications:

- o Nasogastric lavage **should not** be performed if the patient is convulsing
- o **DO NOT** delay transport to accomplish this procedure

Procedure:

1. Explain procedure to patient and question the patient regarding any nasal injuries or occlusions
2. Assemble and prepare equipment
3. Don appropriate personal protective items **including** eyewear, mask and gloves
4. Raise head of bed to high fowler's position if possible. Support the patient's head and shoulders with a pillow
5. Select appropriate catheter size
 - o Adults: 12 – 18 fr
 - o Pediatric: 8 – 12 fr
6. Measure the tube by placing the tip of the tube on the patient's nose, then extend the tube to the tip of the ear lobe and then to the end of the xyphoid process. Use a piece of tape to mark the distance to be inserted or use black markings found on some tubes
7. Curve the end of the tube by coiling the first 6 inches tightly around your finger
8. Lubricate tip with water-soluble jelly or 2% Lidocaine jelly
9. Tilt patient head forward. Pass the tube through the nose downward but do not force. Some people have obstructions in nasal passages. If severe resistance is met, remove the tube, lubricate and try the other nostril
10. If patient is conscious, have them swallow. Advance the tube with each swallow
11. After the tube has been inserted halfway, instruct the patient to talk, if there is any hoarseness or the patient is unable to speak, withdraw the tube and attempt re-insertion
12. Once tube has been inserted, verify proper placement by injecting 10 – 20 ml of air through the tube into the stomach while auscultating the stomach just below the xyphoid process. You should hear a "whooshing" sound of air entering the stomach
13. Connect tube to suction and use lowest possible setting that is effective
14. Introduce lavage fluids (Sodium Chloride solution) in 20 – 30 ml portions and remove the stomach contents. The general rule of thumb is 20 ml in / 20 ml out
15. Continue this lavaging until returning fluid is clear
16. Anchor tube to the patient's nose with tape that has been wrapped around the tube. Do not allow any pressure to be placed on the patient's nares
17. Occasionally auscultated placement of tube during transport

	TAMU EMRC-EMS	ORTHOSTATIC VITAL SIGNS	
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Indications:

Orthostatic vital signs are serial measurements of blood pressure (B/P) and pulse (P) that are taken with the patient in the supine, sitting and standing positions to assess volume depletion. This test is commonly performed on patients who complain of nausea, vomiting, diarrhea, GI bleed and syncope.

Contraindications:

- None if performed with adequate personnel.

Equipment:

- Blood Pressure cuff
- Stethoscope or
- Electronic Measuring devices

Procedure:

1. Place the B/P cuff on the patient. For consistency, the same arm with the same cuff and location of pulse measurement should be used.
2. Initially, the patient needs to be supine. If the supine position compromises the patient's breathing status or comfort level, assist them to a position that is as flat as possible. It is **recommended that two (2) sets** of vital signs be taken in the supine position, **using the second set as the baseline.**
3. The second measurement should be taken with the patient in the sitting position. The patient should be sitting upright, with their legs dangling at the side of the bed or stretcher.
4. The third measurement should be obtained with the patient in the standing position.
Note: If the patient is unable to stand omit this measurement and utilize readings obtained in the sitting position.
5. **Only one minute should elapse between measurements.**
6. **Findings of a decrease of 20 mmHg in systolic pressure, an increase of 10 mmHg in the diastolic pressure and an increase in heart rate of 20 beats per minutes is significant.**

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Indications:

- Patient meeting criteria for pain management

Contraindications:

- Patient that does not meet criteria for pain management

Equipment:

- Appropriate equipment to monitor heart rate and rhythm, blood pressure and pulse oximetry
- Appropriate medication and administration equipment

Procedure:

- Place patient on all monitors
- Have advanced airway equipment available, and medications available to treat adverse reactions
- Prepare and assemble equipment
- Prepare patient for appropriate route of administration
- Use aseptic technique throughout procedure

Treatment Options

- **Cognitive Therapy**
- **Behavioral Therapy**
- **Vascular Access**

USE WITH EXTREME CAUTION WITH SUSPICION OF ALCOHOL OR OTHER INTOXICANT INGESTION

- **Fentanyl**
 - o Adult: 1 – 2 mcg/kg SLOW IV/IO, FAST IN
 - May repeat x 2 or per medical control
 - o Pediatric: 1 – 2 mcg/kg SLOW IV/IO, FAST IN
 - May repeat x 2 or per medical control
- **Morphine**
 - o Adult: 2 – 10 mg IV/IO (If giving weight based: 0.1 mg/kg up to 10mg)
 - May repeat x 2 or per medical control
 - o Pediatric: 0.1 – 0.2 mg/kg IV/IO
 - May repeat x 2 or per medical control
 - Increments of 0.5 mg
 - Max single dose 2 mg
- **Diazepam**
 - o Adult: 2 – 10 mg IV/IO
 - o Pediatric: 0.2 – 0.3 mg/kg IV/IO

	TAMU EMRC-EMS	PAIN MANAGEMENT	
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Special Considerations:

- Rule out other possible causes of abdominal pain prior to treating any patient for kidney stones (see **Abdominal Pain** protocol)
- Do not administer **Fentanyl** and **Morphine** to the same patient
- Beware of synergistic effect of combining **Promethazine** with **Morphine** or **Fentanyl**, causing profound decreases in level of consciousness, respiration, and blood pressure
- **Morphine** is the treatment of choice for burns
- **Fentanyl** is the treatment of choice for significant orthopedic injuries
- Orthopedic injuries resulting in suspected fractures with muscle spasms may warrant judicious use of **Midazolam** or **Diazepam** in conjunction with lower doses of **Fentanyl** – **beware of synergistic effects**
- **Fentanyl** may be administered to patients that are allergic to Morphine, however you should remain prepared for a possible allergic reaction
- Intubation equipment and **Naloxone** should be readily available when administering pain medications
- Pain management should begin as soon as possible in all patients and prior to other treatments in stable patients

	TAMU EMRC-EMS	PATIENT SAFETY RESTRAINT	
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This policy shall attempt to establish guidelines to ensure the safety of EMS personnel as well as patient safety in situation when the patient may be extremely agitated and the potential for harm to self and/or others may exist.

Pre-hospital Patient Restraints (PPR) should be considered whenever a patient requiring immediate medical treatment becomes a threat to himself or other emergency personnel. This should be accomplished with the least amount of force necessary to protect the patient and emergency personnel.

Law enforcement officers should be requested for assistance on any patient who requires physical restraints. A blood glucose level should be obtained as soon as it is safe to do so.

Whenever possible, the EMS communicator should advise responding personnel of potentially unstable or known unstable scenes and/or situations/locations when a request for EMS is received. Additionally, responding personnel are to stage for Law Enforcement personnel and should not enter the location until Law Enforcement Officers have assessed scene safety.

A detailed evaluation of the patient's mental status is required prior to initiating Patient Safety Restraint. Full documentation of all events and patient's condition should appear on the Patient Care Report (PCR) whenever Patient Safety Restraint is utilized.

Agitation or acute behavioral disorders may manifest differently. Always **suspect an organic cause first**. Life-threatening organic conditions that may present with behavioral agitation are subdural hematoma, intracerebral hemorrhage, meningitis, hypertensive crises, hypoglycemia and drugs (especially atropine and cyclic antidepressants).

- This procedure applies to patients being treated under implied consent and **is not** to be used on **patients specifically refusing** transport.
- A Supervisor should be notified ASAP when PPR is attempted.
- If EMS personnel have entered a location that becomes unstable and physical injury is threatened verbally and/or the patient or other parties on scene threaten physical harm, EMS personnel should physically remove themselves from the scene and move to a location of safety until Law Enforcement officials arrive. If necessary, EMS personnel should leave medical equipment to accomplish this task. The safety of EMS personnel comes first.
- In all events, attempts should be made to “talk the patient down” before restraint is considered. The conversation should be honest and straightforward. EMS personnel should attempt to have equally open escape routes for both the EMS providers and the patient.
- Do NOT endanger yourself or other EMS personnel. At all times the safety of the medical personnel should remain first priority.
- Assess the patient's mental status. Determine if the patient has suicidal or homicidal ideation.
- Use the minimum PPR needed to accomplish necessary patient care and ensure safe transportation and crew safety. TAMU EMS should never use hard restraints (e.g., handcuffs, plastic ties, or leathers) to restrain patients.
- Acceptable restraints for EMS personnel include sheets, wristlets, and chest posey.
- Additional manpower should be requested prior to attempting this procedure. A minimum of five (5) people should be present to safely apply PPR. Four-Point restraints (restraining both arms and both legs) are preferred.

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- In addition to securing both arms and legs, it may be helpful to tether the hips, thighs and chest. Tethering the thighs just above the knees prevents kicking more effectively than restraining the ankles.
- Nothing should be placed over the patient's face, head or neck. A surgical mask may be placed **LOOSELY** over the patient's mouth to prevent spitting on emergency personnel.
- A c-collar may be applied to limit the mobility of the patient's neck, decrease the patient's range of motion to protect from biting as well as prevent injuries to the patient.
- Restraints **SHOULD NEVER** be placed in such a way that prevents evaluation of the patient's mental status or interfere with necessary patient care activities.
- **Patients in the care of TAMU personnel should never be placed in a prone position.**
- **Patients in the care of TAMU personnel should never be sandwiched between two (2) long spinal boards.**
- **Patients in the care of TAMU personnel should never be transported with hands and feet tied behind their backs (hog-tied).**
- EMS personnel should monitor circulation and pulses to ensure proper circulation and prevent further injury to the patient.
- A blood glucose level should be obtained as soon as it is safe to do so.
- Full documentation of all events and patient's condition are required on the Patient Care Report (PCR) whenever Patient Safety Restraints are utilized.
- **Continuous ECG, pulse oximetry and blood pressure monitoring (every 5 minutes) are mandatory while being cared for by TAMU personnel.**
- **All patients restrained by TAMU personnel should receive chemical safety sedation to prevent further excessive agitation and struggling against patient safety devices. Continued struggling against safety devices can lead to Hyperkalemia, rhabdomyolysis and cardiac arrest.**

The Medical Director and Assistant Chief – Clinical Services should be notified anytime this procedure is initiated. This may be accomplished by alpha pager and should include patient name and transport destination for follow-up and patient outcome.

	TAMU EMRC-EMS	PATIENT SAFETY SEDATION	
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This policy shall attempt to establish guidelines to ensure the safety of EMS personnel as well as patient safety in situation when the patient may be extremely agitated and the potential for harm to self and/or others may exist.

General Information

Patient Safety Sedation (PSS) is a last resort for safely calming extremely agitated patients when physical restraints have proven to be minimally effective and may further compromise the life, limb or safety of the patient. In all events, attempts should be made to “talk the patient down” prior to physical and/or patient safety sedation.

Do Not endanger yourself or your crew. At All Times, the safety of all medical and non-medical personnel will remain first priority.

Whenever Patient Safety Sedation is used, a detailed evaluation of the patient's mental status is required prior to administration. Full documentation of all events and patient's condition should appear on the Patient Care Report (PCR) whenever Patient Safety Sedation is utilized.

Agitation or acute behavioral disorders may manifest differently. Always **suspect an organic cause first**. Life-threatening organic conditions that may present with behavioral agitation are subdural hematoma, intracerebral hemorrhage, meningitis, hypertensive crises, hypoglycemia and drugs (especially atropine and cyclic antidepressants).

Law enforcement should be requested for assistance on any patient who requires physical restraints as well as patient safety sedation. A blood glucose level should be obtained as soon as it is safe to do so.

Vascular access should be accomplished prior to Patient Safety Sedation if EMS personnel are able to accomplish with minimum risks to the patient and EMS personnel. If unable to obtain due to patient agitation, vascular access should be obtained as soon as possible after Patient Safety Sedation medications have been administered IM. Fluid therapy for hypotension should be considered to maintain a systolic blood pressure of > 90 mmHg.

- Evaluate patient mental status.
- This procedure applies to patients being treated under implied consent and **is not** to be used on **patients specifically refusing** transport.
- A Supervisor should be notified ASAP when PSS is attempted.
- Have sedative medications prepared for injection. Prepare for possible hypotension or CNS depression side effects.
- If possible, inquire about medication allergies.
- Administer sedative medication.
- Midazolam 2.5 mg SLOW IVP (over 2 minutes) or 2 to 5 mg IM (SBP > 90 mmHg OR confirmed radial pulse).
- May repeat IV dose x 2 at 2.5 mg SLOW IVP.
- Additional IM doses require Supervisor contact or medical control.

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- **Onset of action for Midazolam is within 1 to 5 minutes after IVP or 5 to 15 minutes IM.**
- Lower doses should be used in the elderly (age > 60), debilitated or poor risk (respiratory disease, chronic illness) patient.
- **Continuous ECG, pulse oximetry and blood pressure monitoring (every 5 minutes) are mandatory during and after administration of Midazolam.**

The Medical Director, Assistant Chief – Clinical Services should be notified anytime this procedure is initiated. This may be accomplished by alpha pager and should include patient name and transport destination for follow-up and patient outcome.

	TAMU EMRC-EMS	PERICARDIOCENTESIS	
	Standard Delegated Orders – Procedures	PROC 20	Page 325
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General:

- Cardiac tamponade is the hemodynamic result of fluid accumulation within the potential space that surrounds the heart. This occurs from a specific condition, such as, pericarditis and or penetrating cardiac injury.
- The pericardium consists of two layers, an outer fibrous layer and an inner serous layer. The potential space produced by these layers contains approximately 20 ml of fluid with similar electrolyte and protein profiles to plasma. This potential space can accumulate approximately 120 ml of additional fluid without any significant hemodynamic effects.

Policy:

- Pericardiocentesis is the aspiration of excess fluid that has accumulated within the pericardial sac surrounding the heart.
- For the purpose of this procedure and TAMU-EMS, pericardiocentesis is utilized **ONLY** in the **traumatic induced cardiac arrest** patient **AFTER** other less invasive procedures have been attempted.

Equipment:

- Defibrillator with monitor
- Pericardiocentesis kit / 16 or 18 gauge cardiac needle (3 ½")
- 60 ml luer-lock syringes
- Empty evacuated container, 1000 ml
- Betadine, sterile gloves
- Emergency medications: Atropine, Lidocaine, and Epinephrine

Indications:

For use only in adult patients found in traumatic cardiac arrest, **AFTER** the following criteria has been met:

- Airway is secured with Endotracheal intubation
- The patient has received approximately 500 ml – 1000 ml of fluid without change
- The patient has had bilateral chest decompressions performed without change

Precautions:

Pneumothorax or hemo-pneumo-pericardium may result from leaving needle open to air

Complications:

- Cardiac perforation / Ventricular puncture
- Laceration of coronary artery
- Pulseless electrical activity
- Pneumothorax
- Liver laceration

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Procedure:

1. Ensure that a patent IV and Orotracheal Intubation has been established (bilateral IV's are preferred with fluid bolus accomplished)
2. Apply cardiac monitor
3. Identify landmarks (costal margin, xyphoid process)
4. Prepare site (attempt to maintain sterility as much as possible)
5. Cleanse site with Providone-iodine (Betadine)
6. Use a 16 or 18 gauge spinal needle (3 ½") attached to a 3-way stopcock and 60 ml syringe
7. Insert the needle at the xyphocostal angle approximately 45° to the chest. The catheter is directed toward the inferior tip of the left scapula
8. Advance the needle toward the left shoulder while applying a slight negative pressure on the syringe. The sub-xyphoid technique is the safest approach because it avoids injury to the coronary arteries
9. As you advance the needle into the pericardial sac, you should feel a slight give. Begin to aspirate 20 – 30 ml of blood or fluid
10. After aspirating the fluid, withdraw the needle from the chest
11. Assess for any improvement in hemodynamic status. Signs of resolution of tamponade include:
 - Increased response to ACLS therapy
 - Improvement in vital signs and hemodynamics
 - Absence of JVD

	TAMU EMRC-EMS	PHARMACOLOGICALLY ASSISTED INTUBATION - PAI	
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Adult Pharmacologically Assisted Intubation (PAI)

Indication:

- Unable to establish or maintain ability to secure the airway by oral/nasal intubation
- Conditions requiring management and protection of the airway

Contraindications:

- **Absolute Contraindications to PAI:**
 - Spontaneous breathing with adequate ventilation and a patent airway
 - Inadequate personnel or other resources to safely carry out procedure
 - Prior history or family history of malignant hyperthermia including the following symptoms (when paralytic agents have been used):
 1. Intractable jaw spasms (Trismus)
 2. Generalized rigidity
 3. Body temperature
 4. Tachypnea / Tachycardia

Relative Contraindications to PAI:

- History of pseudocholinesterase deficiency (*applies to use of paralytic agent*)
- Significant body surface area burns (greater than 24 hours old) (*applies to use of paralytic agents*)
- Spinal cord injury (greater than 24 hours old) (*applies to use of paralytic agents*)
- Crush injuries (greater than 24-48 hours old)
- Consider defasciculating dose of Vecuronium – 1 mg
- Known hyperkalemia
- Neuromuscular diseases such as myasthenia gravis, muscular dystrophy (*applies to use of paralytic agents*)
- Concern that intubation might be unsuccessful due to:
 1. Major facial or laryngeal trauma
 2. Upper airway obstruction
 3. Distorted facial or airway anatomy

Equipment:

- | | |
|---|---|
| <ul style="list-style-type: none"> • Adequate personnel (2 to perform safely and correctly) • Lidocaine 100mg / 10ml • Fentanyl 100mcg / 2ml • Etomidate 20mg / 20ml • Succinylcholine 20mg / ml • Midazolam 5mg / 5ml • Vecuronium 10mg / 10ml • 2 – 3 or 5ml syringe • 2 – 5 or 10ml syringe • Endotracheal tube and stylet • Laryngoscope handle and blades | <ul style="list-style-type: none"> • Bag Valve Mask, complete • Water-soluble lubricant • Tape or tube securing device • Oral Airway • Stethoscope • Suction equipment and supplies • Oxygen • Surgical airway kit • Bougie ET Tube introducer • Monitoring equipment: <ul style="list-style-type: none"> o ECG o Pulse oximeter |
|---|---|

	TAMU EMRC-EMS	PHARMACOLOGICALLY ASSISTED INTUBATION - PAI	
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Procedure:

1. Prepare:

- Ensure all equipment is prepared and easily accessible including EtCO₂
- The patient should already be connected to all monitoring devices including ECG monitor, pulse oximeter

2. Pre-Oxygenate:

- 100% Oxygen for 2 minutes.
- **DO NOT BVM UNLESS O₂ SAT BELOW 90%**
BVM ventilation in this circumstance may cause gastric distention and subsequent aspiration of gastric contents. Gentle BVM ventilation with cricoid pressure can be utilized as drugs are administered. Do not spend excessive time trying to raise the saturation of a respiratory patient whose exacerbation may prevent improved saturation.

3. Pressure:

- Sellicks maneuver should be initiated prior to succinylcholine
- Continued until intubation completed and position confirmed
- **Proceed to step 6 and intubate here if adequate relaxation is accomplished.**

4. Deep Sedation:

- **Premedicate – 2-3 minute onset**
 - o Administer Lidocaine 100mg (1mg/kg)
 - o Administer Fentanyl 100mcg SLOW IV (1-2mcg/kg)
- **Relaxation**
 - o Administer Etomidate 20mg IV (0.2 – 0.3 mg/kg)
 - o Proceed to step 5 and intubate if adequate relaxation is accomplished.
- **Neuromuscular blockade (if needed)**
 - o Administer Succinylcholine 200mg IV (1.5mg/kg)
 - o **Only if intubation cannot be accomplished with medications up to and including Etomidate**

5. Intubate:

- Visualize, Confirm, and Inflate cuff then properly secure
- Maintain Sellick maneuver until cuff up and position confirmed
Verification of Endotracheal Tube Placement
 1. Visualization of the ET Tube passing through the glottic opening
 2. Auscultation of chest for breath sounds in 4 quadrants
 3. Auscultation over epigastrium
 4. Improvement and/or maintenance of high O₂ saturation on pulse oximeter
 5. EtCO₂
 6. Bulb Check
 7. Clearing and fogging of endotracheal tube during ventilation and exhalation

	TAMU EMRC-EMS	PHARMACOLOGICALLY ASSISTED INTUBATION - PAI	
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6. Maintenance:

- Administer Midazolam 5mg (0.1mg/kg) SLOW IV For Continued Sedation

7. Consider other medications post intubation for continued sedation:

- Vecuronium 10mg IV (0.1mg/kg) (*if prolonged paralysis is indicated*)
- Diazepam 5 – 10 mg IV
- Morphine 2 – 10 mg IV for pain control
- Additional Fentanyl

Failed Intubation

- A maximum of two (2) attempts at tracheal intubation may be attempted within 1 minute.
- If unable to intubate with initial two (2) attempts or if O₂ sat < 80%, initiate BVM ventilations while maintaining cricoid pressure until O₂ sat > 90%
- In the event that intubation cannot be performed after paralysis, utilize a combitube. Surgical airway should only be performed when all other adjunct airways/means have been exhausted.

Precautions:

- PAI should be used with caution in patients who are dependent on their own upper airway muscle tone or specific positioning to maintain the patency of their airway (e.g. cases of upper airway obstruction by abscess or abnormal anatomy). As paralysis occurs and these patients lose their ability to maintain an airway, BVM ventilation and intubation may not be possible because of obstructions or distorted anatomy. In these patients, carefully titrated sedation and conscious intubation may be a more acceptable alternative in securing an airway.
- Cricoid pressure serves a dual function: The posterior movement of the larynx makes visualization of the vocal cords and tube placement easier, and the gentle pressure occludes the esophagus, preventing passive reflux of stomach contents into the oropharynx.

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Pediatric Pharmacologically Assisted Intubation (PAI)

Indication:

- Unable to establish or maintain ability to secure the airway by oral/nasal intubation
- Conditions requiring management and protection of the airway
- **Paralytics for Age > 4 years only**

Contraindications:

- **Absolute Contraindications to PAI:**
 - Spontaneous breathing with adequate ventilation and a patent airway
 - Inadequate personnel or other resources to safely carry out procedure
 - Prior history or family history of malignant hyperthermia including the following symptoms (when paralytic agents have been used):
 1. Intractable jaw spasms (Trismus)
 2. Generalized rigidity
 3. Body temperature
 4. Tachypnea / Tachycardia

Relative Contraindications to PAI:

- History of pseudocholinesterase deficiency (*applies to use of paralytic agent*)
- Significant body surface area burns (greater than 24 hours old) (*applies to use of paralytic agents*)
- Spinal cord injury (greater than 24 hours old) (*applies to use of paralytic agents*)
- Crush injuries (greater than 24-48 hours old)
- Consider consult for defasciculating dose of Vecuronium – 1 mg
- Known hyperkalemia
- Neuromuscular diseases such as myasthenia gravis, muscular dystrophy (*applies to use of paralytic agents*)
- Concern that intubation might be unsuccessful due to:
 1. Major facial or laryngeal trauma
 2. Upper airway obstruction
 3. Distorted facial or airway anatomy

Equipment:

• Adequate personnel (2 to perform safely and correctly) • Lidocaine 100mg / 10ml • Atropine (1mg / 10ml) • Fentanyl 100mcg / 2ml • Etomidate 20mg / 20ml • Succinylcholine 20mg / ml • Midazolam 5mg / 5ml • 2 – 3 or 5ml syringe • 2 – 5 or 10ml syringe • Endotracheal tube and stylet • Laryngoscope handle and blades	• Bag Valve Mask, complete • Water-soluble lubricant • Tape or tube securing device • Oral Airway • Stethoscope • Suction equipment and supplies • Oxygen • Surgical airway kit • Bougie ET Tube introducer • Monitoring equipment: - o ECG - o Pulse oximeter
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	TAMU EMRC-EMS	PHARMACOLOGICALLY ASSISTED INTUBATION - PAI	
	Standard Delegated Orders – Procedures	PROC 21	Page 331
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Procedure:

1. Prepare:

- Ensure all equipment is prepared and easily accessible including EtCO₂
- The patient should already be connected to all monitoring devices including ECG monitor, pulse oximeter

2. Pre-Oxygenate:

- 100% Oxygen for 2 minutes.
- **DO NOT BVM UNLESS O₂ SAT BELOW 90%**
BVM ventilation in this circumstance may cause gastric distention and subsequent aspiration of gastric contents. Gentle BVM ventilation with cricoid pressure can be utilized as drugs are administered. Do not spend excessive time trying to raise the saturation of a respiratory patient whose exacerbation may prevent improved saturation.

3. Pressure:

- Sellicks maneuver should be initiated prior to succinylcholine
- Continued until intubation completed and position confirmed
- **Proceed to step 6 and intubate here if adequate relaxation is accomplished.**

4. Deep Sedation:

- **Premedicate – 2-3 minute onset**
 - o Administer Lidocaine (1mg/kg)
 - o Administer Atropine (0.01 mg/kg IV/IO)
(minimum dose 0.1 mg, maximum dose 0.5 mg)
 - o Administer Fentanyl (2mcg / kg SLOW IV)
 - o Administer Midazolam (0.1 mg/kg IV)
- **Proceed to step 5 and intubate if adequate relaxation is accomplished.**
- **Neuromuscular blockade (if needed)**
 - o Administer Succinylcholine (1mg/kg IV) (child)
(2mg/kg IV) (infant)
- **Do not repeat dose**
- **Only if intubation cannot be accomplished with medications up to and including Midazolam**

5. Intubate:

- Visualize, Confirm, and Inflate cuff then properly secure
- Maintain Sellick maneuver until cuff up and position confirmed
Verification of Endotracheal Tube Placement
 1. Visualization of the ET Tube passing through the glottic opening
 2. Auscultation of chest for breath sounds in 4 quadrants
 3. Auscultation over epigastrium
 4. Improvement and/or maintenance of high O₂ saturation on pulse oximeter
 5. EtCO₂
 6. Bulb Check if > 20kg or 5 years of age
 7. Clearing and fogging of endotracheal tube during ventilation and exhalation

	TAMU EMRC-EMS	PHARMACOLOGICALLY ASSISTED INTUBATION - PAI	
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6. Maintenance:

- Administer Midazolam (0.2 mg/kg) SLOW IV For Continued Sedation

Failed Intubation

- A maximum of two (2) attempts at tracheal intubation may be attempted within 1 minute.
- If unable to intubate with initial two (2) attempts or if O₂ sat < 80%, initiate BVM ventilations while maintaining cricoid pressure until O₂ sat > 90%
- In the event that intubation cannot be performed after paralysis, assist ventilations with a BVM

Precautions:

- PAI should be used with caution in patients who are dependent on their own upper airway muscle tone or specific positioning to maintain the patency of their airway (e.g. cases of upper airway obstruction by abscess or abnormal anatomy). As paralysis occurs and these patients lose their ability to maintain an airway, BVM ventilation and intubation may not be possible because of obstructions or distorted anatomy. In these patients, carefully titrated sedation and conscious intubation may be a more acceptable alternative in securing an airway.
- Cricoid pressure serves a dual function: The posterior movement of the larynx makes visualization of the vocal cords and tube placement easier, and the gentle pressure occludes the esophagus, preventing passive reflux of stomach contents into the oropharynx.

	TAMU EMRC-EMS	POSITIVE END EXPIRATORY PRESSURE (PEEP)	
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Indication:

Any patient with evidence of moderate to severe atelectasis, aspiration or alveolar infiltrate especially:

- o Pulmonary edema
- o Near drowning
- o Smoke or fume inhalation with severe respiratory distress

Contraindications:

None

Equipment:

- PEEP valve
- BVM, complete
- Intubation equipment
- ECG monitoring equipment and supplies
- Oxygen

Procedure:

1. **ENDOTRACHEALLY INTUBATE THE PATIENT**
2. Attach PEEP valve to end adapter of BVM
3. Attach BVM to Endotracheal tube in usual manner
4. Ventilate patient as usual
5. Observe ECG rhythm and vital signs closely. PEEP may cause dysrhythmias and/or changes in vitals. Discontinue or decrease PEEP if significant adverse responses occur

	TAMU EMRC-EMS	PULSE OXIMETRY MONITORING	
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General:

- The pulse oximeter allows for the assessment of respiratory function by measuring unsaturated and saturated hemoglobin within the blood. The difference between the two is the percentage of saturation.
- The percent of hemoglobin saturated with oxygen is referred to as Oxygen Saturation (SpO₂ or O₂ Sat)
- A normal SpO₂ for healthy individuals is 95 – 100%
- A low (93%) or falling SpO₂ indicates that the airway or ventilatory status may be compromised.

Indications:

- Patients with suspected hypoxemia from any etiology
- Cardiac problems
- Multiple system trauma
- Altered level of consciousness

Precautions:

- The pulse oximeter interprets carboxyhemoglobin (COHb) as saturated hemoglobin and provides a falsely elevated reading.
- Additionally, high oxygen saturation is not an indicator of sufficient oxygen delivery to the tissues, as this depends on cardiac output, and the amount of hemoglobin and level of vasoconstriction present.
- Pulse oximetry readings may be difficult to obtain in states of low perfusion (shock).

Procedure:

1. Ensure the patency of the airway and manage as indicated
2. The probe should be applied to a finger or toe
3. Best probe site in adults is usually the middle fingertip with nail polish removed
4. Turn machine on
5. A radial pulse should be taken to evaluate heart rate reading on monitor

Pediatric Considerations:

- Special probes may be required to obtain readings in pediatric patients

Special Notes:

- Attempt to obtain and document pulse oximetry readings before and during oxygen therapy
- The use of pulse oximetry as a vital sign is encouraged, as the oximeter may be helpful in detecting hypoxia not evidenced by signs or symptoms
- Application to pulseless or cold extremities may result in inaccurate determinations of hemoglobin saturation
- False readings may be indicated by extremely rapid changing or fluctuating readings
- Patients with hemoglobin disorders such as carbon monoxide poisoning and anemia may give artificially high SpO₂ readings. Readings in such patients should be interpreted with extreme caution
- Excessive probe movement may alter accuracy of reading
- Optical interference by bright light (direct sunlight, fluorescent and xenon arc lighting). Cover the sensor.
- Poor waveforms/signals (Hypovolemia, hypothermia, profound hypotension, or vasoconstriction)

	TAMU EMRC-EMS	SPINAL MOTION RESTRICTION	
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Indications:

- Complaint of pain or tenderness in the spine or back that is secondary to trauma
- Multiple systems trauma
- Complaints and/or signs of numbness or weakness in an extremity secondary to trauma
- Patient with Decreased LOC (including patients altered by the influence of drugs and alcohol) with a high suspicion of trauma.
- Signs of face, head, or neck trauma, (lacerations, contusions, nose bleeds, etc.)
- Any unconscious patient who may be a victim of an accident or fall

Precautions:

Moving the head into a neutral in-line position is contraindicated if:

- There is pain and/or muscle spasm upon movement.
- Patient holds head angulated (tilted) to the side and is unable to move it.
- The maneuver cannot be safely due to limited space or other conditions. In these cases the patient should be immobilized in the position in which he/she is found.

Procedure:

1. Ensure adequacy of airway
2. Assess the head and neck for obvious injuries and distended neck veins while providing manual neutral in-line immobilization for the head and neck.
3. Treat any life threatening conditions
4. Apply an appropriate size cervical collar and continue to manually maintain neutral in-line immobilization.
5. Secure the patient to a long spine board/short board/K.E.D. The short board and K.E.D. are for extrication only. The patient should then be placed on a longboard.
6. Ensure that the alignment is maintained while the torso, then the head and the rest of the body are properly secured. After the patient is properly secured to the spine board manual immobilization can be released.
7. Treat other injuries
8. Transport

	TAMU EMRC-EMS	SURGICAL AIRWAY	
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CICOTHYROIDOTOMY

Indication

- To provide an emergency airway when other means have failed
- Needle cricothyrotomy/jet ventilation inadequate or prolonged
- Needle cricothyrotomy/jet ventilation impossible or inappropriate
- This is the method of last resort at establishing an airway

Procedure

1. Cricoid pressure shall be applied and maintained continuously.
2. Prepare and assemble all equipment
 - #11 or #15 scalpel
 - Endotracheal tube
 - Stylet or **Eschmann Tracheal Tube Introducer**
 - 10 ml syringe
3. The cricothyroid membrane is the preferred site and should be identified by the attendant performing the skill. If, due to trauma or obstruction at this level, the cricothyroid membrane is inaccessible, a site two finger-breadths above the sternoclavicular notch should be identified and utilized.
4. Prepare the site with a Betadine and/or alcohol solution
5. Make a 1.5–2 cm vertical incision through the skin overlying the cricothyroid membrane.
6. Bluntly dissect the skin and fatty tissue overlying the trachea to visualize the cricothyroid membrane
7. Make a horizontal incision through the cricothyroid membrane into the trachea.
8. Insert the scalpel handle into the tracheal incision and twist 3–4 times (If a larger opening is required, a gloved finger can be inserted into the trachea to enlarge the opening)
9. Form the distal end of the endotracheal tube into the shape of an “L” utilizing the stylet.
10. Insert the tube within the trachea, remove the stylet, and inflate the cuff.

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QUICKTRACH SURGICAL AIRWAY

Indications:

- Critical patient in whom a patent airway cannot be maintained or established by oropharyngeal or naso-pharyngeal airway, BVM or Orotracheal Intubation.
- Patient cannot receive adequate respiratory assistance with BVM and supplemental O₂ after a failed PAI attempt.
- Critical patient with severe maxillo-facial-trauma, inflammation or severe swelling of the airway or other mechanism resulting in a life-threatening airway compromise.

Contraindications:

- An airway obtainable by any other means.

Equipment:

- QuickTrach Surgical Airway Kit
- BVM w/supplemental oxygen
- Stethoscope

Procedure:

- Prepare and assemble equipment.
- If possible, hyperventilate the patient.
- Disinfect the area of procedure.
- For **Non-Traumatic** patients hyperextend the neck.
- Locate the cricothyroid membrane.
 - o Place finger on thyroid cartilage (“Adams apple”) and
 - o Move finger down into soft depression between thyroid cartilage and cricoid cartilage (next firm “bump”).
 - o For trauma or obstruction, site two fingerbreadths above the sternoclavicular notch should be identified and utilized.
- Perforate tissue at a 90 degree angle with device.
- Aspirate while inserting the device.
- After insertion, change angle of insertion to 45 degrees and advance until stopper hits the skin.
- Remove the stopper.
- Hold needle in place while advancing the plastic cannula.
- Withdraw needle and advance cannula until the cannula is flush with the skin.
- Secure device with the strap and attach 15 mm connector.
- Ventilate patient w/BVM and supplemental oxygen.

	TAMU EMRC-EMS	TERMINATION OF MEDICAL RESUSCITATION	
	Standard Delegated Orders – Procedures	PROC 26	Page 338
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Purpose

Termination of advanced life support efforts in the pre-hospital setting applies to situations in which adult patients experience a non-traumatic cardiac arrest. The decision to implement the policy may be initiated by the Supervisor or the In-Charge Paramedic on scene in accordance with the standing orders set forth in this policy by the Texas A&M University-E.M.S. Medical Director.

Procedure

Resuscitation efforts **should not** be terminated in patients meeting the following criteria:

1. The patient whose cardiac arrest may be associated with overdose, toxicologic agents, hypo/hyperthermia, submersion, electrocution, burns, trauma, airway obstruction or other sudden external sources.
2. The patient who has persistent ventricular fibrillation or ventricular tachycardia.
3. The patient who has a return of a spontaneous pulse-even a transient pulse.
4. The patient who demonstrates any neurological signs {i.e. spontaneous eye opening or spontaneous movement}.
5. The patient who has suffered cardiac arrest while in the care of TAMU-EMS personnel.
6. The patient who does not have a secure endotracheal tube in place or a patent IV.

Resuscitation efforts may be terminated in patients meeting the following criteria:

1. The patient should be an adult greater than 18 years of age.
2. The patient should have had a presumed cardiac arrest not associated with sudden external sources {i.e. overdose, toxicoexposure, hypo/hyperthermia, submersion, electrocution, burns, trauma, airway obstruction}
3. The patient should have been intubated successfully with ResQPOD in place and have had vascular access and standard advanced life support measures applied throughout the resuscitation.
4. Resuscitative efforts should continue **at least 20 minutes after** ALS interventions have begun regardless of previous CPR time and arrest interval.

In the event that any family member or responsible party indicates their objection to the concept of termination of resuscitative efforts, the resuscitation efforts shall continue until the receiving emergency room physician assumes care.

Once the decision has been made to terminate resuscitative efforts, the EMS crew shall tie off and knot all established IV lines close to the site and remove the IV fluid bag and any other supplies at the code site. The IV catheters and endotracheal tube should remain in place.

The Supervisor or In-Charge paramedic shall contact the EMS Communications Center for the notification of code being terminated and to call law enforcement if not already on scene.

At all times TAMU-EMS personnel shall be attentive to the psychological needs of the “survivors” and provide support as needed.

	TAMU EMRC-EMS	TERMINATION OF TRAUMA RESUSCITATION	
	Standard Delegated Orders – Procedures	PROC 27	Page 339
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Purpose

Termination of advanced life support efforts in the pre-hospital setting applies to situations in which adult patients experience a traumatic cardiac arrest. The decision to implement the policy may be initiated by the Supervisor or the In-Charge Paramedic on scene in accordance with the standing orders set forth in this policy by the Texas A&M University-E.M.S. Medical Director.

It is important to remember that **Transport is Treatment** for the multi-system trauma patient. This protocol is not intended to delay on scene times of trauma patients. It specifically addresses those situations when the multi system trauma patient has an extended extrication time.

Procedure

Resuscitation efforts **should not** be terminated in patients meeting the following criteria:

1. The patient whose cardiac arrest may be associated with hypo/hyperthermia and submersion.
2. The patient who has persistent ventricular fibrillation or ventricular tachycardia.
3. The patient who has a return of a spontaneous pulse-even a transient pulse.
4. The patient who demonstrates any neurological signs {i.e. spontaneous eye opening or spontaneous movement}.
5. The patient who does not have a secure Endotracheal tube in place, a patent IV, bilateral chest decompression and pericardiocentesis.

Resuscitation efforts may be terminated in patients meeting the following criteria:

1. The patient should be an adult greater than 18 years of age.
2. The patient should have been intubated successfully.
3. An IV of NS should be established with a bolus of 1000–2000 ml.
4. The patient should have bilateral chest decompression performed.
5. The patient should have pericardiocentesis procedure performed.
6. ECG should show asystole and be verified in two leads.

Once the decision has been made to terminate resuscitative efforts, the EMS crew shall tie off and knot all established IV lines close to the site and remove the IV fluid bag and any other supplies at the code site. The IV catheters and Endotracheal tube should remain in place.

The Supervisor or In-Charge paramedic shall contact the EMS Communications Center for the notification of code being terminated and to call law enforcement if not already on scene.

	TAMU EMRC-EMS	VAGAL MANEUVERS	
	Standard Delegated Orders – Procedures	PROC 28	Page 340
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Indications:

- Narrow Complex Tachycardia

Contraindications:

- None for Valsalva maneuver

Equipment Needed:

- Personal protective equipment
- ECG monitor
- Vascular Access established
- Oxygen
- Emergency medications and equipment should be immediately available.

Procedure:

1. Ensure that patient is on oxygen, has a patent vascular access, and is on a cardiac monitor.
2. Record the ECG rhythm continuously while performing all Vagal maneuvers.
3. Instruct the patient to cough forcefully several times. If this is ineffective proceed to the Valsalva maneuver.

Valsalva Maneuver:

1. Have the patient take a deep breath and "bear down" against a closed glottis, as if trying to "clear" or "pop" his or her ears. Have the patient perform this for as long as they can. (Alternative method: Remove plunger from a small syringe and instruct patient to blow through small end.)
2. If no conversion, repeat the procedure, up to three attempts total.
3. If still no conversion and not contraindicated, proceed with carotid sinus massage.

	TAMU EMRC-EMS	VAGAL MANEUVERS	
	Standard Delegated Orders – Procedures	PROC 28	Page 341
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Carotid Sinus Massage

Contraindications:

- Presence of carotid bruit
- Unequal carotid pulses
- Patient < 4 years old or > 50 years old
- Diagnosis of prior CVA or carotid surgery

Procedure:

1. Place the patient supine or semi-fowler with neck extended. Separately palpate each carotid artery for pulse quality, and auscultate both for bruits.
2. Tilt patient's head to one side and locate the right carotid sinus adjacent to the carotid pulse.
3. Using 2–3 fingers, press firmly over carotid sinus toward cervical vertebrae and massage up and back in a circular motion.

Never massage both carotid arteries at the same time.

1. Discontinue the procedure after any of the following:
 - After 20 seconds
 - The first indication of conversion
 - At first sign of slowing heart rate or heart block.
 - If patient experiences dizziness or altered level of consciousness.
2. If no conversion after the first attempt, repeat the procedure **once**.
3. If still unsuccessful and patient condition warrants, administer an appropriate pharmacological agent.

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IV THERAPY PROCEDURE

Indications:

Intravenous access shall be obtained when the clinical assessment indicates the necessity of medication administration, fluid replacement and/or resuscitation.

General Standards:

- Vascular access can be accomplished by a saline lock (see appropriate procedure) or peripheral venous infusion
- In all pediatric patients receiving intravenous fluids, a buretrol administration set should be used and delivery of fluids should be monitored

If non-traumatic / non-shock medical patient:

1. Appropriate size catheter or butterfly needle (usually 16G, 18G, or 20G)
2. Microdrip administration set (60 gtts/ml) or Macrodrip administration set (10 gtts/ml)
3. Extension set or saline lock on end of administration set
4. Normal Saline (0.9% NS)
5. Run at KVO rate (15 – 30 ml/hr) or rate specified by protocol
6. Saline Lock:

If trauma patient or shock symptoms present:

1. Large bore catheter when possible (usually 14G or 16G)
 - If shock is present use 2 large bore IV's
2. Standard administration set (10 gtts/ml) or blood administration set
3. Blood Tubing:

The use of blood administration tubing is recommended in place of standard IV sets for patients that may require blood transfusion or rapid fluid infusion
4. Normal Saline (0.9% NS)
5. Run at rate specified by protocol

Complications:

- Infection
- Air embolism
- Catheter shear
- Hematoma
- Arterial puncture

Equipment:

- Appropriate size and type IV/IO catheter
- Appropriate administration set
- Povidone, Iodine or alcohol preps
- 5 – 10 ml syringe
- IV start kit
- Dressing and tape or commercial securing device (“Venigard”, “Tegaderm”)
- Blood draw set up

Note: **DO NOT** risk loss of the IV site to perform a blood draw. Blood can be obtained later at the receiving facility

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Procedure for Peripheral Cannulation:

1. Don appropriate personal protective gear
2. Explain the need for IV administration and describe what will be done
3. Check the IV solution for expiration date, cloudiness, etc.
4. Spike the bag with the appropriate IV tubing
5. Remove air from IV tubing
6. Place the tourniquet on the extremity
7. Select the site (Preferred IV site for patients in cardiac arrest is the antecubital fossa)
8. Cleanse the skin with Betadine solution, PVP, or alcohol prep
9. Make puncture while maintaining vein stability
10. Watch for flashback. If you have no blood return and you are in the vein, remove the needle hub and attaché your syringe to assist in aspirating for blood. Once you have a blood return, advance the catheter as per normal IV technique and attach the IV tubing.
11. Remove the tourniquet
12. Begin IV fluid therapy. Observe the site for redness, edema or other indications of infiltration
13. Secure catheter and IV tubing (remember **Not** to restrict other vascular structures by applying dressing too tight)

Considerations:

Initiation of vascular access generally should not delay patient transport to the hospital. Whenever possible:

1. Do not place IV on side of injured arm or chest
2. Avoid using lower extremities unless last resort
3. Do not place IV on side of previous mastectomy
4. Do not place IV on side of stroke or paralysis
5. Hickman catheters or other indwelling IV access ports should only be used if unstable patient condition necessitates an IV, and no other access is available
6. **DO NOT USE RENAL SHUNTS**

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EXTERNAL JUGULAR CANNULATION

Indications:

For infusion of fluid or administration of medications in any urgent/critical patient in whom vascular access cannot be obtained in 3 attempts at other peripheral sites. EJV cannulation may be considered as first-line vascular access in cardiac arrest or severe hypovolemic / hypotensive crisis.

Procedure:

1. Don appropriate personal protection gear
2. Select and prepare equipment. Attach 10 ml syringe to hub of catheter/needle to assist in identification of placement in patients with low or no cardiac output
3. **Clear air from tubing**
4. Place the patient supine, trendelenburg position
5. Identify external jugular vein
6. Prepare the site with PVP, alcohol or povidone/iodine
7. Place a finger above the clavicle to facilitate filling the vein (this should also assist with stabilization of the site)
8. Make your puncture midway between the angle of the jaw and the middle of the clavicle while maintaining vein stability with your finger
9. Watch for flashback. If you have no blood return and you are in the vein, remove the needle hub and attaché your syringe to assist in aspirating for blood. Once you have blood return, advance the catheter as per normal IV technique and attach the IV solution
10. **DO NOT ALLOW AIR TO ENTER THE CATHETER ONCE IT HAS BEEN INSERTED.** Remember to cover the catheter with gloved finger while preparing to attach the IV tubing
11. **DO NOT** risk loss of vascular access to perform a blood draw
12. Initiate IV fluid therapy. Observe site for redness, edema or other indications of infiltration
13. Secure IV catheter and tubing. A cervical collar may be useful to prevent mobility and ensure that the catheter does not dislodge
14. **Two** attempts are allowed on **one side**. **NEVER attempt cannulation on both external jugular veins**
15. Consider IO if all other attempts are unsuccessful

Complications:

- Air embolism
- Pneumothorax
- Infection
- Catheter shear
- Hematoma
- Arterial puncture
- Fluid overload

Considerations:

- Initiation of vascular access generally should not delay patient transport to the hospital

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SALINE LOCK

Indications:

Injection locks may be used to secure venous access in any of the following situations:

- The EMS personnel do not anticipate the immediate need for administering IV medications or IV fluid in the pre-hospital setting at the discretion of the technician. The saline lock should be flushed periodically in extended transport situations
- The EMS crew has already secured a patent IV line for medications and fluid but anticipate a second IV site or “backup” will be required (i.e. Acute MI, CVA)
- The patient will be receiving IV adenosine. In this situation, personnel should have a second IV established with large bore catheter of NS

Procedure:

1. Don appropriate protective gear
2. Explain the procedure. If the patient is a child **DO NOT** lie regarding the amount of discomfort involved with the procedure. You may lose all credibility with your patient
3. Assemble and prepare equipment. Attach all components of injection lock
4. Establish IV with angiocath in usual manner
5. Once needle is removed, attach injection lock to catheter
6. flush lock and catheter with 5 ml of normal saline
7. Observe site for redness, edema or other indicators of infiltration
8. If patent, secure IV catheter in usual manner

Complications:

- Infection
- Air embolism
- Catheter shear
- Hematoma
- Arterial puncture

Considerations:

Initiation of vascular access generally should not delay patient transport to the hospital. Whenever possible:

1. Do not place IV or saline lock on side of injured arm or chest
2. Avoid using lower extremities unless last resort
3. Do not place IV on side of previous mastectomy
4. Do not place IV on side of stroke or paralysis
5. Hickman catheters or other indwelling IV access ports (not renal shunts) should be used only if unstable patient condition necessitates an IV, and no other access is available
6. **DO NOT USE RENAL SHUNTS**

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EZ-IO ACCESS DEVICE - ADULT

Indications:

Any adult patient (>40 kg) for who you are unable to obtain peripheral vascular access after 2 attempts or 90 seconds and that has one or more of the following:

- Hemodynamic instability
- Respiratory compromise
- Patients requiring EMERGENCY medicinal therapy or volume replacement

Consult required for placement in all other patients where treatment warrants vascular access, but peripheral vascular access has been unobtainable. UNDER NO CIRCUMSTANCES should it be used for prophylactic care.

Contraindications:

- Patients weighing less than 40 kg
- Any patient that may receive fibrinolytic or thrombolytic therapy; specific to Active MI and/or Stroke
- Hypoglycemic patients needing D50; **EXCEPTION ONLY is Cardiac Arrest**
- Suspected fracture of the associated tibia, femur or humerus
- Previous orthopedic procedures (i.e. knee replacement etc.)
- Extremity that is compromised by a pre-existing condition (i.e. tumor or PVD)
- Overlying skin infection/trauma at placement site
- Inability to locate the anatomical landmarks for insertion (see below)
- Excessive tissue over the insertion site
- Patients at risk of NO Transport: i.e. Unconscious Hypoglycemic (Diabetic)

Equipment:

- EZ-IO™ Driver
- EZ-IO™ Adult 25mm Needle Set (Blue)
- Povidone iodine, Betadine, Chloraprep swabs or prep pads
- IV setup and/or optional extension tubing
- 10 ml or 20 ml syringe
- Rolled gauze

Procedure:

9. Don appropriate protective gear
10. Determine if EZ-IO™ insertion is indicated and no contraindications are present
11. Locate proper site for EZ-IO™ insertion
 - **Proximal Tibia** – Insertion site is approximately 2 cm below the patella and 2 cm (depending on patient anatomy) medial to the tibial tuberosity.
 - **Distal Tibia** - Insertion site is located approximately 3 cm proximal to the most prominent aspect of the medial malleolus. Place one finger directly over the medial malleolus; move approximately 2 cm (depending on patient anatomy) proximal and palpate the anterior and posterior borders of the tibia to assure that your insertion site is on the flat center aspect of the bone.

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- **Proximal Humerus** – Insertion site is located directly on the most prominent aspect of the greater tubercle. Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle, this is the surgical neck. Approximately 1 cm (depending on patient anatomy) above the surgical neck is the insertion site.
 - i. *Ensure that the patient's hand is resting on the abdomen and that the elbow is adducted (close to the body).*
- 12. Cleanse the insertion site with betadine/iodine or similar prep-pads using accepted aseptic technique working from the inside to the outside in concentric circles.
- 13. If patient is conscious, inform patient of the EMERGENT need to perform procedure and that they might feel some discomfort until Lidocaine is administered. Obtain consent from patient; recall that the patient has the right to refuse.
- 14. Consider an anesthetic/analgesic if indicated
- 15. Prepare the EZ-IO™ Driver and Needle Set.
 - Open the blue cartridge and attach the needle set to the driver
 - Remove needle set from the cartridge
 - Remove the cap from the needle set.
- 16. Begin insertion of the EZ-IO™
 - Hold the EZ-IO™ Driver in one hand and stabilize the leg near the insertion site with the opposite hand.
 - Position the driver at the insertion site at a 90° angle to the bone surface.
 - Power the driver through the skin at the insertion site until it makes contact with bone. Evaluate the EZ-IO™ needle for the 5 mm mark.
- 17. Power the EZ-IO™ Driver and continue insertion until the flange (base) of the EZ-IO™ needle touches the skin OR a sudden lack of resistance is felt, indicating entry into the marrow cavity.
- 18. Remove the driver from the needle set.
- 19. Remove the stylet from the catheter. **DO NOT REPLACE or ATTEMPT to recap the needle set. Dispose of sharps.**
- 20. Confirm proper EZ-IO™ Catheter position by checking for at least 1 of the following:
 - IMMEDIATELY SYRINGE FLUSH with at least 10cc of fluid
 - IO Catheter standing at 90° and firmly seated in bone
 - Blood at tip of the stylet
 - A free-flow of fluid through the needle with no evidence of extravasation. **DO NOT ASPIRATE**
- 21. Connect IV tubing and begin infusion. An extension set is recommended.
- 22. If site does not flow, consider pressure infusion, reflush and/or rotate needle 180°. Consider a combination of these procedures and repeat as necessary.
- 23. Dress site with rolled gauze to prevent accidental dislodgement.

IF PATIENT IS CONSCIOUS FOR PROCEDURE

1. Administer bolus 50 mg (2.5) ml of Lidocaine 2% **SLOW** push for local analgesia. This will probably provide pain relief for up to 1 hour.
2. Consider pain management for additional discomfort/pain associated with infusion.

Patients failing IO access should be rescued by:

1. Alternate site placement (opposite side or alternate long bone, if available)
2. Repeated attempts at standard vascular access if permitted by operational protocols.

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EZ-IO ACCESS DEVICE - PEDIATRIC

Indications:

- Pediatric EZ-IO™ placement is limited to patients 3-39 kg for who you are unable to obtain peripheral vascular access after 2 attempts or 90 seconds and that has one or more of the following:
 - Hemodynamic instability
 - Respiratory compromise
 - Patients requiring EMERGENCY medicinal therapy or volume replacement
- **Consult required for placement in all other patients where treatment warrants vascular access, but peripheral vascular access has been unobtainable. UNDER NO CIRCUMSTANCES should it be used for prophylactic care.**
- **IO placement Should Not be attempted on conscious pediatric patients unless loss of life or limb could result if treatment withheld.**

Contraindications:

- Patients weighing less than 3 kg or more than 39 kg
- History of chronic bone disease
- Osteomyelitis
- Fracture or trauma to site
 - Exception:** Minor to moderate burns if no other IO site is available
- Hypoglycemic patients needing Dextrose; **EXCEPTION ONLY is Cardiac Arrest**
- Inability to locate the anatomical landmarks for insertion (see below)

General:

- Flow rates for all IO's are to be at TKO unless otherwise indicated by specific protocol or Medical Control

Equipment:

- EZ-IO™ Driver
- EZ-IO™ Pediatric 15 mm Needle Set (Pink)
- Povidone iodine, Betadine, Chloraprep swabs or prep pads
- IV setup and/or optional extension tubing
- 10 ml or 20 ml syringe
- Rolled gauze

Procedure:

1. Don appropriate protective gear
2. Determine if EZ-IO™ insertion is indicated and no contraindications are present
3. Locate proper site for EZ-IO™ insertion
 - **Proximal Tibia** - If NO tuberosity is present, the insertion is located approximately 4 cm below the patella and then medial along the flat aspect of the tibia. If the tuberosity IS present, the insertion site is located approximately 2cm medial to the tibial tuberosity along the flat aspect of the tibia. Carefully feel for the “give” or “pop” indicating penetration into the medullary space.

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- **Distal Tibia** - Approximately 2 cm (depending on patient anatomy) proximal of the medial malleolus. Palpate the anterior and posterior borders of the tibia to assure that your insertion site is on the flat center aspect of the bone.
 - **Proximal Humerus** - The insertion is located directly on the most prominent aspect of the greater tubercle. Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle, this is the surgical neck. Approximately 1 cm (depending on patient anatomy) above the surgical neck is the insertion site. *Ensure that the patient's hand is resting on the abdomen and that the elbow is adducted and positioned at the level of the spine. The proximal humerus may be difficult or impossible to palpate in children less than 5 years of age as the greater tubercle has not yet developed. In these cases the insertion will most likely be a shaft insertion.*
4. Cleanse the insertion site with betadine/iodine or similar prep-pads using accepted aseptic technique working from the inside to the outside in concentric circles.
 5. If patient is conscious, inform patient of the EMERGENT need to perform procedure. Obtain consent from patient; recall that the patient has the right to refuse.
 6. Consider an anesthetic/analgesic if indicated
 7. Prepare the EZ-IO™ Driver and Needle Set.
 - Open the pink cartridge and attach the needle set to the driver
 - Remove needle set from the cartridge
 - Remove the cap from the needle set.
 8. Begin insertion of the EZ-IO™
 - Hold the EZ-IO™ Driver in one hand and stabilize the leg near the insertion site with the opposite hand.
 - Position the driver at the insertion site at a 90° angle to the bone surface.
 - Power the driver through the skin at the insertion site until it makes contact with bone. Evaluate the EZ-IO™ needle for the 5 mm mark.
 9. Power the EZ-IO™ Driver and continue insertion until the flange (base) of the EZ-IO™ needle touches the skin OR a sudden lack of resistance is felt, indicating entry into the marrow cavity.
 10. Remove the driver from the needle set.
 11. Remove the stylet from the catheter. **DO NOT REPLACE or ATTEMPT to recap the needle set. Dispose of sharps.**
 12. Confirm proper EZ-IO™ Catheter position by checking for at least 1 of the following:
 - IMMEDIATELY SYRINGE FLUSH with at least 10cc of fluid
 - IO Catheter standing at 90° and firmly seated in bone
 - Blood at tip of the stylet
 - A free-flow of fluid through the needle with no evidence of extravasation. **DO NOT ASPIRATE**
 13. Connect IV tubing and begin infusion. An extension set is recommended.
 14. If site does not flow, consider pressure infusion, reflush and/or rotate needle 180°. Consider a combination of these procedures and repeat as necessary.
 15. Dress site with rolled gauze to prevent accidental dislodgement.

Patients failing IO access should be rescued by:

1. Alternate site placement (opposite side or alternate long bone, if available)
2. Repeated attempts at standard vascular access if permitted by operational protocols.

MED REFERENCE



	TAMU EMRC-EMS	ACETAMINOPHEN	
	Standard Delegated Orders – Medicine Reference	MED 01	Page 351
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(Tylenol, APAP)

Medication

An analgesic / antipyretic that has weak anti-inflammatory activity and no effects on platelets or bleeding time

Mechanism of Action

Reduces fever by acting directly on the heat regulating center of the hypothalamus.

Indications

Fever of any etiology

Contraindications

Hypersensitivity

Side Effects

Rarely, gastric irritation

Dosage and Administration

ADULT: 650-975 mg PO or PR

PEDIATRIC: 15mg/kg PO or PR

Acetaminophen Dosing Concentration: 325 mg / 10.15 ml

Age	Weight (lbs)	Dose
0-3 mo	6-11	40 mg / 1.25 ml
6-11 mo	12-17	80 mg / 2.5 ml
12-23 mo	18-23	120mg / 3.75 ml
2-3 yrs	24-35	160 mg / 5 ml
4-5 yrs	36-47	240 mg / 7.5 ml
6-8 yrs	48-59	320 mg / 10 ml
9-10 yrs	60-71	400 mg / 12.5 ml
11 yrs	72-95	480 mg / 15 ml

Special Considerations

- Doses may be repeated q 4 hours prn not to exceed 75 mg/kg total per 24-hour period.
- Do not administer if last administration was < 4 hours ago.
- Hepatic damage begins at overdoses of $\approx$ 150 mg/kg.

	TAMU EMRC-EMS	ACTIVATED CHARCOAL	
	Standard Delegated Orders – Medicine Reference	MED 02	Page 352
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(Sorbitol)

Medication

Activated charcoal is an absorbent compound suspension with cathartic. Each milliliter contains 208 mg of activated charcoal and 400 mg Sorbitol.

Mechanism of Action

Activated charcoal is pharmacologically inert and is not absorbed in the gastrointestinal tract. It adsorbs a variety of organic and inorganic substances. Once bound by the charcoal in the gut, toxins are inactivated and excreted. Under appropriate physiologic conditions, activated charcoal absorbs toxins instantaneously.

Indications

- Only used after the stomach has been evacuated.
- Ingestion of certain poisons or excessive amounts of certain medications.
- Especially useful in Aspirin, Amphetamines, Strychnine, Dilantin, T.C.A. and Phenobarbital overdoses.

Contraindications

- Should not be administered before, or in conjunction with, Syrup of Ipecac. If syrup of Ipecac is being used to produce emesis, administration of Actidose charcoal should be delayed 30 – 60 minutes after the conclusion of emesis.
- Should not be given in cyanide poisoning or corrosive substances.
- Is of no value in poisoning due to methanol, iron tablets, and organophosphates.

Side Effects

- Aspiration of charcoal has been reported to produce airway obstruction.
- Gastrointestinal obstruction from charcoal may occur as a consequence of toxin-induced antiperistaltic effects.

Dosage and Administration

- Prior to administration, shake the container thoroughly for a minimum of 30 seconds. After administration, the container should be thoroughly rinsed with water and any residue should be administered to the patient to ensure that the entire dose has been delivered.

ADULTS: 50 – 100 grams May be given PO or NG tube (1-2g/kg)

PEDIATRICS: 1g/kg May be given PO or NG tube

Special Considerations

- If patient is unconscious or has ingested a substance that may result in LOC, have patent airway secured before administration of charcoal.

	TAMU EMRC-EMS	ADENOSINE	
	Standard Delegated Orders – Medicine Reference	MED 03	Page 353
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(Adenocard)

Medication

A naturally occurring endogenous purine nucleoside found in all body cells. It is primarily formed from the breakdown of adenosine triphosphate (ATP). Adenosine slows tachycardias associated with the AV node via modulation of the autonomic nervous system without causing negative inotropic effects.

Mechanism of Action

- It acts directly on sinus pacemaker cells and vagal nerve terminals to decrease chronotropic and dromotropic activity.
- Adenocard slows electrical conduction through the AV node and can interrupt the re-entry pathways through the AV node.
- Onset: 5 – 10 seconds
- Duration: 10 seconds

Indications

- PSVT
- PSVT associated with Wolff-Parkinson-White Syndrome.
- Diagnostic for stable wide complex tachycardias of unknown origin.
- Not for the treatment of Atrial Flutter or Fibrillation; however, if mistakenly administered to patients in these arrhythmias, the decrease in AV conduction may unmask atrial activity.

Contraindications

- 2° or 3° AV block – Except in patients with an artificial pacemaker
- Sick Sinus Syndrome – Except in patients with an artificial pacemaker
- Use with caution in pregnant women.
- Use with caution in patients who are wheezing.

Side Effects

- Due to the very short half-life of Adenocard ($\approx$ 10 sec.), these side effects should be short lasting.
- May produce short lasting arrhythmias at time of conversion:
 - PVC's
 - PAC's
 - Sinus Bradycardia / Asystole / IVR
 - AV Blocks: Patients who develop high grade block after administration of one dose should not be given additional doses.
- May produce any of the following:

1. Chest Tightness 2. Shortness of Breath / Dyspnea 3. Bronchoconstriction 4. Lightheadedness	5. Headache 6. Vertigo 7. Facial Flushing 8. Nausea
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	TAMU EMRC-EMS	ADENOSINE	
	Standard Delegated Orders – Medicine Reference	MED 03	Page 354
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Dosage and Administration

- Adenocard should be given as a rapid bolus intravenous injection.
- It should be given as proximal as possible and followed by a rapid flush (at least 10 ml).

ADULT: Initial: 6 mg RAPID IV/IO (1 – 2 sec)
 Repeat: If 1st dose is unsuccessful, administer 12 mg RAPID
 IV/IO – The 12 mg dose may be repeated once if
 needed (maximum 30 mg administered)

PEDIATRIC: Initial: 0.1 mg/kg RAPID IV/IO
 Repeat: If 1st dose unsuccessful, administer 0.2 mg/kg RAPID
 IV/IO – The 0.2 mg/kg dose may be repeated once if
 needed (maximum 0.5 mg/kg administered)

Special Considerations

- Treatment of any prolonged adverse effects should be individualized and directed towards the specific event.
- Due to the antagonistic effect of methylxanthines (caffeine and Theophylline), larger doses of Adenocard may be necessary in the presence of methylxanthines.
- Due to the potentiation by dipyridamole (Persantine), smaller doses of Adenocard may be effective in the presence of dipyridamole.
- Adenocard is not blocked by Atropine.
- Remember the Valsalva maneuver.
- Record 3 lead ECG prior to use of Adenosine.
- Rapid injection with a flush of 10 – 20 ml of saline, into the IV line increases likelihood of success.

	TAMU EMRC-EMS	ALBUTEROL	
	Standard Delegated Orders – Medicine Reference	MED 04	Page 355
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(Proventil, Ventolin)

Medication

Albuterol is a sympathomimetic that is selective for beta2-adrenergic receptors. It is considered a selective β_2 adrenergic bronchodilator.

Mechanism of Action

Albuterol relaxes the smooth muscles of the bronchial tree and peripheral vasculature by stimulating adrenergic receptors of the sympathetic nervous system. Like other β Adrenergic agonists, it can produce significant cardiovascular effects in some patients, as measured by pulse rate and/or blood pressure.

Onset: 5-15 min after inhalation

Indications

Bronchospasm in adults and children with reversible obstructive airway disease and acute attacks of bronchospasm.

Contraindications

- Albuterol should not be administered to patients with known hypersensitivity to any of its components.
- It should be used with caution in patients with:
 1. Cardiovascular disorders, especially coronary insufficiency
 2. Cardiac arrhythmias and hypertension
 3. Convulsive disorders
 4. Hyperthyroidism
 5. Diabetes

Side Effects

The following are possible, but occur infrequently in patients given Albuterol:

1. Body Tremors, Headache, Insomnia
2. Hypertension, Arrhythmias
3. Bronchospasm
4. Urticaria, Angioedema, Rash

Dosage and Administration

ADULT & PEDIATRIC: 2.5 mg / 3.0 ml
Via hand held or face mask nebulizer
Continued until respiratory status improves.

Special Considerations

- Any β_2 adrenergic agonist (Albuterol) may have a significant cardiac effect.
- Accurate documentation of pulse rate before, during, and after nubilization treatment **MUST BE NOTED**.
- Effects last up to 2 – 3 hours.

	TAMU EMRC-EMS	AMIODARONE HCL	
	Standard Delegated Orders – Medicine Reference	MED 05	Page 356
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(Cordarone)

Medication

Amiodarone is classified as a Class III anti-arrhythmic but has characteristics of all 4 anti-arrhythmic classes.

Mechanism of Action

- Amiodarone has a rapid onset.
- Acts directly on the cardiac cell membrane by blocking sodium channels.
- Prolongs repolarization and refractory period.
- Increases ventricular fibrillation threshold.
- Acts on peripheral smooth muscle to ↓ peripheral resistance.

Indications

- Ventricular Fibrillation
- Hemo-dynamically unstable Ventricular Tachycardia
- Narrow Complex Tachycardia

Contraindications

- Use with caution in patients with Hypokalemia and Hypomagnesemia
- Heart Block or severe Bradycardia

Side Effects

- Hypotension
- Bradycardia
- Nausea
- Watch for QT prolongation
- May worsen the arrhythmia or precipitate new arrhythmias

	TAMU EMRC-EMS	AMIODARONE HCL	
	Standard Delegated Orders – Medicine Reference	MED 05	Page 357
<u>TOC</u>			

Dosage and Administration

ADULT:

- Ventricular Fibrillation/Pulseless V-Tach: 300 mg IV Bolus
- Narrow Complex Tachycardia –Stable: 150 mg IV Loading dose
- Narrow Tachycardia – Unstable: 150 mg IV Loading dose
- Wide Complex Tachycardia –Stable:150 mg IV Loading dose
- Wide Tachycardia – Unstable: 150 mg IV Loading dose
- Ventricular Ectopy: 150 mg IV Loading dose
- Post-Resuscitation Management: 1 mg/min IV infusion

Loading Dose

- Mix 150 mg Amiodarone into 100 ml NS, infusion over 10 min.

Initiating an Infusion:

- **Mix 150 mg Amiodarone into 100 ml NS, Run infusion at 1 mg/min**
- The infusion should be started within 20 min after the resolution of the arrhythmia.

PEDIATRIC:

- Ventricular Fibrillation/Pulseless V-Tach: 5 mg/kg IV/IO bolus
- Narrow Complex Tachycardia – Stable: 5mg/kg IV/IO over 20 – 60 min
- Narrow Complex Tachycardia – Unstable: 5mg/kg IV/IO over 20 – 60 min
- Wide Complex Tachycardia – Stable: 5 mg/kg IV/IO over 20 – 60 min
- Wide Complex Tachycardia – Unstable: 5 mg/kg IV/IO over 20 – 60 min
- Ventricular Ectopy: 5 mg/kg IV/IO over 20 – 60 min
- Post-Resuscitation Management: 5 mg/kg IV/IO over 20 – 60 min

Special Considerations

Drugs whose effects may be increased by Amiodarone:

- Propranolol - Beta Blocker
- Verapamil - Calcium Channel Blocker
- Diltiazem - Calcium Channel Blocker

Drugs whose effects may increase side effects of Amiodarone:

- Bretylium - Hypotension
- Morphine Sulfate - Hypotension
- Fentanyl - Hypotension and Bradycardia

Other Drug to Drug interactions:

- Dilantin - Decreases serum blood levels of Amiodarone
- Cimetidine - Increases serum blood levels of Amiodarone
- Digitalis - Digitalis toxicity

	TAMU EMRC-EMS	ASPIRIN	
	Standard Delegated Orders – Medicine Reference	MED 06	Page 358
<u>TOC</u>			

(Acetylsalicylic Acid, ASA)

Medication

Aspirin (Acetylsalicylic acid) is an analgesic, antipyretic, and anti-inflammatory. It also inhibits platelet aggregation thus making it a beneficial anti-thrombolytic.

Mechanism of Action

Aspirin inhibits the synthesis of thromboxane A₂ which induces platelet aggregation, by inhibiting a metabolic enzyme necessary for its production. Aspirin is rapidly absorbed from stomach and small bowel.

Indications

- Ischemic chest pain
- Suspected Myocardial Infarction

Contraindications

- Hypersensitivity to salicylates and its derivatives.
- Previous reactions (e.g. asthma, angioneurotic edema, urticaria, rhinitis)
- Current anticoagulant therapy
- Known or suspected active hemorrhage or bleeding tendency.

Side Effects

- Prolonged bleeding time
- Gastric irritation
- N/V

Dosage and Administration

4 tablets (81 mg chewable tablets) PO (Baby Aspirin) – 324 mg total

Special Considerations

- ASA should be administered to patients on anticoagulants and regardless of prior ASA use.

	TAMU EMRC-EMS	ATROPINE SULFATE	
	Standard Delegated Orders – Medicine Reference	MED 07	Page 359
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Medication

Atropine is a naturally occurring autonomic nervous system inhibitor extracted from the Atropa belladonna plant (deadly nightshade).

Mechanism of Action

- Blocks parasympathetic (vagal) action on the heart.
 1. Improves cardiac output by ↑ rate of sinus node discharge.
 2. ↑ conduction through the A-V junction
- By ↑ heart rate to normal range, Atropine ↓ the chance of ectopic activity in the ventricles.

Indications

- Sinus Bradycardia when accompanied by PVC's, hypotension or other symptoms of poor perfusion.
- Asystole
- 2° or 3° AVB when accompanied by bradycardia
- Organophosphate poisoning
- In Neurological injuries with a heart rate < 60 and hypotensive.
- Pediatric PAI Procedure

Contraindications

- Atrial flutter or Atrial fibrillation when there is rapid ventricular response.
- History of glaucoma should be given atropine with caution.

Side Effects

- Blurred vision, Pupillary dilation
- Headache
- Dry mouth, thirst

Dosage and Administration

ADULT:

- Bradycardia: 0.5 – 1 mg IV/IO or 2 mg ET q 5 min
(Max 0.04 mg/kg)
- Asystole: 1 mg IV/IO or mg ET q 5 min (Max of 0.04 mg/kg)
- Organophosphate Poisoning: 2 mg IM or IV/IO q 5 min.

PEDIATRIC:

- 0.02 mg/kg IV/ET/IO (0.04 mg/kg for ET)
- Minimum single dose 0.1 mg
 - Max single dose 0.5 mg
 - May be repeated X 1

Special Considerations

- May precipitate VTach or VFib, use with caution in the AMI setting.
- Doses < 0.5 mg, or a dose given too slowly, may ↓ rather than ↑ the heart rate.

	TAMU EMRC-EMS	DEXTROSE (25%-50%)	
	Standard Delegated Orders – Medicine Reference	MED 08	Page 360
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Medication

A simple sugar of the monosaccharide group, dextrose occurs naturally in plants and in the body fluids of animals. It is formed in the digestive tract by the action of enzymes on carbohydrates. It is packaged as a hypertonic dextrose solution.

Mechanism of Action

The administration of Dextrose raises circulating blood sugar levels. It also acts transiently as a diuretic. Dextrose (glucose) is the main energy source for the body's cells, especially the brain.

Onset: IV: 30 – 60 seconds

Indications

- Hypoglycemia
- Unconsciousness of unknown origin, without S/S of head injury
- Seizure of unknown origin, without S/S of head injury

Contraindications

D50% should not be administered to any patient presenting with S/S of central nervous system pathology.

- Intracranial Hemorrhage
- Cerebral Edema
- ↑ ICP

Side Effects

- Tissue necrosis due to infiltration
- Administration of dextrose may precipitate severe neurologic symptoms in the alcoholic patient
- Hyperglycemia / hyperosmolality

Dosage and Administration

It is important that blood be drawn prior to the administration of Dextrose and that a patent vascular access has been established.

ADULT: 25 grams IV (50 ml of D₅₀)

PEDIATRICS: 0.5 g/kg

- >10 kg or 2 years of age: 1 ml/kg of 50%
- <10 kg: 2 ml/kg of 25%

Special Considerations

- Dextrose is a relatively thick solution and is more easily administered through a large bore catheter.
- Administration of dextrose may precipitate severe neurologic symptoms in the alcoholic patient. Thiamine should be administered prior to Dextrose in patient presenting with possible alcohol abuse.
- If level of consciousness increases, ensure patient eats.

	TAMU EMRC-EMS	DIAZEPAM	
	Standard Delegated Orders – Medicine Reference	MED 09	Page 361
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(Valium)

Medication

A CNS depressant (sedative) derived from benzodiazepine, with muscle-relaxant and anticonvulsant properties, Diazepam is used to relieve anxiety and tension and for the treatment of seizure disorders.

Mechanism of Action

- Diazepam induces calming effects by depressing the limbic system (emotional intensity) and R.A.S. (level of alertness) thereby alleviating anxiety and inducing amnesia.
- Suppresses the spread of seizure activity through the motor cortex of the brain and elevates seizure threshold.
- Relaxes skeletal muscles and has no autonomic actions and does not inhibit conditioned reflexes.

Indications

- Sedation for acute stress anxiety reactions
- Acute alcohol withdrawal to relieve acute delirium tremens or agitation
- Status epilepticus and severe, recurrent convulsive seizures
- Sedation before cardioversion in conscious patients
- Isolated musculoskeletal injuries

Contraindications

- Alcohol or sedative ingestion prior to administration
- Respiratory depression
- Shock, coma, or acute alcoholic intoxication with ↓ V/S
- Caution in pregnancy, especially the 1st trimester

Side Effects

- Drowsiness, confusion, stupor, fatigue
- Ataxia (shaky movements and unsteady gait)
- Transient Hypotension
- Respiratory depression

Dosage and Administration

ADULTS: 2 -10 mg Slow IV/IO (4 – 20 mg PR)
Until desired dose or effect

- Lower doses (2 – 5 mg) for elderly / debilitated patients

PEDIATRICS: 0.2 – 0.3 mg/kg Slow IV/IO (0.4 – 0.6 mg/kg PR)
Until desired dose or effect

- Maximum dose 5 mg if patient < 2 yrs.
- Maximum dose 10 mg if patient > 10 yrs.

	TAMU EMRC-EMS	DIAZEPAM	
	Standard Delegated Orders – Medicine Reference	MED 09	Page 362
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Special Considerations

- In order to reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling, and rarely, vascular impairment, Diazepam should be injected slowly and small veins, such as those on the dorsum of the hand or wrist, should not be used. Extreme care should be taken to avoid intra-arterial administration or extravasation.
- **Diazepam should not be mixed or diluted with other solutions or medications.**
- **Has a cumulative and potentiating effect with alcohol and other sedative drugs.**
- **Respiratory depression is generally caused by rapid IV administration.**

	TAMU EMRC-EMS	DILTIAZEM	
	Standard Delegated Orders – Medicine Reference	MED 10	Page 363
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(Cardizem)

Medication

Calcium channel blocker

Mechanism of Action

Diltiazem inhibits the influx of Ca⁺ ions during membrane depolarization of cardiac and vascular smooth muscle. Diltiazem slows the ventricular rate in patients with a rapid ventricular response during A-Fib or A-Flutter. The therapeutic benefits of Diltiazem in supraventricular tachycardias are related to its ability to slow AV nodal conduction time and prolong AV nodal refractoriness.

Indications

- Narrow-complex tachycardia refractory to Adenosine
- A-Fib/A-Flutter with RVR (>150 bpm)

Contraindications

- Ventricular tachycardia or any wide QRS of uncertain origin.
- Known hypersensitivity
- Patient with sick sinus syndrome except in the presence of a functioning ventricular pacemaker.
- Patient with 2° or 3° AV block
- Any patient who has received IV beta blockers within the last few hours.
- Patients with A-Fib or A-Flutter associated with WPW and short PR syndrome.
- Contraindicated in newborns.

Side Effects

- 2° or 3° AV Block
- Hypotension
- Nausea
- Vomiting
- Dizziness

Dosage and Administration

ADULT: Diltiazem 10 – 20 mg IV
 -- Followed by 80 – 90 mg infusion at 5 mg/hr

Special Considerations

Patient may experience burning or itching at the injection site.

	TAMU EMRC-EMS	DIPHENHYDRAMINE	
	Standard Delegated Orders – Medicine Reference	MED 11	Page 364
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(Benadryl)

Medication

An antihistamine agent, Diphenhydramine is a crystalline powder, freely soluble in water and alcohol.

Mechanism of Action

Diphenhydramine produces anticholinergic (drying) and sedative effects. Strongly opposes the action (dilation and leakiness) of histamine on the capillary bed by binding with the histamine H2 receptor site.

- Diphenhydramine blocks histamine effects that are caused by allergic reactions.
- It reverses the extrapyramidal side effects of phenothiazines. (Haldol)
- Diphenhydramine reduces or prevents motion sickness.

Indications

- Anaphylactic shock and severe allergic reaction
- Extrapyramidal reactions (Dystonia) caused by the use of phenothiazine medications.
- Motion sickness

Contraindications

- Pregnancy
- Asthma
- Glaucoma or Prostate Problems
- Known alcohol or depressant abuse

Side Effects

- Drowsiness, confusion, sedation
- Blurred vision
- Dry mouth
- Dysuria and urinary retention
- Wheezing due to thickening of bronchial secretions
- Excitability in pediatric patients

Dosage and Administration

ADULTS: 50 mg IV/IM/IO or
25 mg IV / 25 mg IM

PEDIATRIC: 1 – 2 mg/kg IV/IM/IO (not to exceed 50 mg IV single dose)

Special Considerations

- Diphenhydramine should be used as an adjunct to epinephrine and other standard measures for the acute symptoms of anaphylaxis.
- Antihistamine overdose reactions may vary from central nervous system depression to stimulation.
- Use extreme caution when administering to patients who have ingested alcohol and other depressant drugs.

	TAMU EMRC-EMS	DOPAMINE HCL	
	Standard Delegated Orders – Medicine Reference	MED 12	Page 365
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(Intropin)

Medication

A catecholamine synthesized by the adrenal gland, dopamine is the immediate precursor in the synthesis of norepinephrine.

Mechanism of Action

Dopamine acts as a β sympathetic mediator causing an $\uparrow$ in the force and rate of cardiac contractions as well as dilation of the renal and mesenteric arteries.

- Dopamine exerts an inotropic effect on the myocardium resulting in a $\uparrow$ cardiac output. Dopamine usually $\uparrow$ systolic and pulse pressure with either no effect or a slight $\uparrow$ in diastolic pressure.
- Dopamine does not significantly $\uparrow$ myocardial O_2 consumption.
- Dopamine dilates renal vasculature presumptively by activation of a dopaminergic receptor, causing an $\uparrow$ glomerular filtration rate, renal blood flow and sodium excretion ($\uparrow$ urinary output)
- Action of this medication is dependent on the dosage level:

1. Low dosages: (1-2 $\mu\text{g/kg/min}$) 2. Moderate dosages: (2-10 $\mu\text{g/kg/min}$) 3. Mod. High dosages: (10-20 $\mu\text{g/kg/min}$) 4. High dosages: 5. (> 20 $\mu\text{g/kg/min}$)	- β effects predominate - $\uparrow$ Myocardial contractility - $\uparrow$ Cardiac Output - Dilation of renal and mesenteric arteries - $\uparrow$ B/P - Peripheral vasoconstriction - α effect reverses dilation of renal and mesenteric vessels. - $\downarrow$ Flow through these vessels
---	--

Indications

- Hypotension during non-hypovolemic shock states.
- Symptomatic bradycardia when refractory to Atropine and external pacing.

Contraindications

- Dopamine should not be administered in the presence of uncorrected tachyarrhythmias or VFib
- Serious acute hypertension may develop in patients with pheochromocytoma (a tumor that produces epinephrine and/or related substances)

Side Effects

- Ectopic Beats, Palpitations, Tachycardia
- N/V
- Dyspnea
- Angina
- Headache

	TAMU EMRC-EMS	DOPAMINE HCL	
	Standard Delegated Orders – Medicine Reference	MED 12	Page 366
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Dosage and Administration

ADULT: Administer 5 – 10 µg/kg/min via IV infusion using a microdrip set. Titrate the infusion to effect on level of consciousness and B/P.

Special Considerations

- Dopamine ↑ contractility of the myocardium and may be detrimental in patients with severe myocardial ischemia.
- Do not mix with sodium bicarbonate since dopamine may be inactivated by alkaline solutions.
- The effects of dopamine may be potentiated by medications such as Parnate, Marplan, and Nardil.
- Serious acute hypertension may develop in patients with pheocromocytoma (a tumor that produces epinephrine and/or related substances).

	TAMU EMRC-EMS	EPINEPHRINE HCL	
	Standard Delegated Orders – Medicine Reference	MED 13	Page 367
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(Adrenaline)

Medication

Epinephrine is an endogenous (hormone) catecholamine with nonselective β_1 , β_2 and α properties. It is an adrenergic (sympathomimetic) agent and cardiac stimulant; It is secreted by the medulla of the adrenal gland.

Mechanism of Action

- Epinephrine stimulates alpha-1, beta-1, and beta-2 adrenergic receptors in dose-related fashion. The most prominent actions are on the β receptors of the heart, vasculature, and other smooth muscles.
- Rapid injection produces a rapid increase in systolic pressure, ventricular contractility, and heart rate.
- The β_1 sympathetic actions of epinephrine cause:
 1. Increased rate of sinus node
 2. Increased myocardial contractility
 3. Increased AV conduction
 4. Increased myocardial irritability
- The β_2 sympathetic action causes bronchodilation and vasodilation.
- The α effect of epinephrine causes vasoconstriction in the arterioles of the skin, mucosa, and splanchnic areas to:
 1. $\uparrow$ the perfusion pressure and possibly improving coronary blood flow.
 2. Antagonize the effects of histamine.

Indications

- Anaphylaxis / Acute allergic reaction
- Asthma
- The treatment and prophylaxis of cardiac arrest to:
 1. Restore electrical activity in asystole
 2. Enhance defibrillation potential in VFib
 3. Elevate SVR and $\uparrow$ perfusion pressure during resuscitative efforts
- Bradyarrhythmias resistant to Atropine.

Contraindications

- No contraindications in cardiac arrest or anaphylactic shock
- Hypersensitivity (only on pulsing patients)
- Hypovolemic shock
- Use with caution in:
 1. Hypertensive states
 2. Ischemic Heart Disease / Coronary insufficiency
 3. Obstetrical patient with B/P > 120/80 mmHg
 4. In patients receiving Isoproterenol, digitalis, and/or other sympathomimetics

Side Effects

- | | |
|--|--|
| <ul style="list-style-type: none"> • Arrhythmia's / Tachycardias • Palpitations / Ectopic beats • Precipitation of anginal pain | <ul style="list-style-type: none"> • $\uparrow$ B/P • Anxiety • Restlessness / tremors |
|--|--|

	TAMU EMRC-EMS	EPINEPHRINE HCL	
	Standard Delegated Orders – Medicine Reference	MED 13	Page 368
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Dosage and Administration

- 1:10,000 contains: 0.1 mg/ml
- 1:1,000 contains: 1 mg/ml

ADULT:

- Cardiac Arrest: 1 mg IV/IO / 2 mg ET q 3 – 5 min
- Allergic Reaction: 0.3 mg IM (1:1,000)
- Anaphylaxis: 0.5 mg IV/IO (1:10,000) - unconscious
0.5 mg SL (1:1,000) - vascular collapse
- Bronchospasm: 0.3 mg SQ (1:1,000)

PEDIATRIC:

- Cardiac Arrest: 0.01 mg/kg IV/IO (0.1 ml/kg 1:10,000) q 3 – 5 min
0.1 mg/kg ET (1:1,000)
- Allergic Reaction: 0.01 mg/kg IM (1:1,000)
- Anaphylaxis: 0.01 mg/kg IV/IO (1:10,000)
0.01 mg/kg SL (1:1,000)
- Bronchospasm: 0.01 mg/kg SQ (1:1,000)

INFUSION:

PEDIATRICS:

To mix Epinephrine infusion

- 0.6 multiplied by the child's weight in kg. This amount (in mg) is then added to enough IV solution to equal a total volume of 100 ml.
- Infuse at **20 ml/hr** until clinical response (increased heart rate **OR** blood pressure **OR** improved systemic perfusion)
- Reduce infusion to **0.1 to 1 mcg/kg/minute**
- 10 ml/hr equals 1 mcg/kg/minute

Special Considerations

- In cases of shock, administer epinephrine via the IV route rather than the subcutaneous route due to the poor perfusion.
- MAOI's may potentiate the effect of epinephrine.
- Beta-adrenergic antagonists may blunt inotropic response.
- May be deactivated by alkaline solutions (sodium bicarbonate, Furosemide).

	TAMU EMRC-EMS	ETOMIDATE	
	Standard Delegated Orders – Medicine Reference	MED 14	Page 369
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(Amidate)

Medication

Etomidate is a non-barbiturate hypnotic without analgesic properties. In therapeutic doses, Etomidate has minimal effect on myocardial metabolism, cardiac output, and peripheral or pulmonary circulation.

Mechanism of Action

Etomidate is a sedative-hypnotic used to induce anesthesia that should last approximately 3 – 10 minutes.

Indications

Induction of anesthesia prior to administration of a neuromuscular blockade

Contraindications

None when used as indicated

Side Effects

- Hypotension, arrhythmias, hypertension
- Hyperventilation, hypoventilation, laryngospasm
- Myoclonus, tonic movement, eye movements
- Nausea/Vomiting

Dosage and Administration

ADULT: 20 mg IV

PEDIATRIC: No protocol

Special Considerations

- Use with caution in patients with focal epilepsy
- Injection into small veins can cause pain
- Myoclonus is reduced by pre-medicating with Diazepam

	TAMU EMRC-EMS	FENTANYL	
	Standard Delegated Orders – Medicine Reference	MED 15	Page 370
<u>TOC</u>			

(Sublimaze)

Medication

A potent synthetic opiate with analgesic properties. In therapeutic doses, Fentanyl has little effect on hemodynamic compromise, and may be useful in those with borderline hypotension or heart failure.

Mechanism of Action

- Inhibits ascending pain pathways primarily through interaction with opioid μ receptors located in the brain, spinal cord and smooth muscle.
- Drug alters perception of pain and emotional response to pain.
- When administered in high doses it may produce loss of consciousness.

Indications

For control of moderate to severe pain related to:

- Musculo-skeletal disorders
- Burns
- Amputations
- Abdominal pain indicative of kidney stones
- PAI Procedure

Contraindications

Hypersensitivity to drug

Side Effects

- Bradycardia
- Apnea, Hypoventilation
- Headache, Dizziness, Sedation
- Nausea/Vomiting, Constipation

Dosage and Administration

ADULT:	1 – 2 mcg/kg SLOW IV/IO, FAST IN 100 mcg SLOW IV/IO, FAST IN	Pain management PAI
PEDIATRIC:	1 – 2 mcg/kg SLOW IV/IO, FAST IN 2 mcg/kg SLOW IV/IO, FAST IN	Pain management PAI

Special Considerations

- Use with caution in elderly, young, or debilitated patients
- Use with caution in patients with respiratory or hepatic dysfunction
- May interfere with neurological assessment in patients with head injury
- Not for routine administration for generalized abdominal pain

	TAMU EMRC-EMS	FUROSEMIDE	
	Standard Delegated Orders – Medicine Reference	MED 16	Page 371
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(Lasix)

Medication

Furosemide is a potent diuretic that inhibits the reabsorption of sodium and chloride in the proximal tubule of the loop of Henle.

Mechanism of Action

- Furosemide inhibits sodium and chloride reabsorption in the kidneys promoting diuresis.
- It is also thought that Furosemide causes venous dilation, decreasing venous return.
- Furosemide is a rapid acting diuretic with peak effects within 15 – 30 minutes of administration.

Indication

- CHF
- Acute Cardiogenic pulmonary edema

Contraindications

- Anuria (inability to urinate)
- Pregnant women (Furosemide has been known to cause fetal abnormalities)
- Patients presenting with Hypokalemia (low potassium)
 - *ECG: prominent p waves, diminished t waves, and u waves.*
- Patients presenting with S/S of Hypovolemia, dehydration, or other states of severe electrolyte depletion.

Side Effects

- | | |
|--|--|
| <ul style="list-style-type: none"> • Hypotension • ECG changes • Dehydration • Hypochloremia | <ul style="list-style-type: none"> • Hypokalemia • Hyponatremia • Hyperglycemia |
|--|--|

Dosage and Administration

ADULTS: If patient is taking Furosemide, give dose equal to patient's total daily dose
 If patient is not taking Furosemide, administer 40 mg SLOW IV

Special Considerations

- Furosemide is a potent diuretic that if given in excessive amounts, can lead to a profound diuresis with water and electrolyte depletion. Potassium loss may occur which may aggravate arrhythmias.
- Because of the potency of this medication, blood pressure should be monitored carefully.
- Digitalis toxicity may be potentiated by the potassium depletion. Watch for dysrhythmias.

	TAMU EMRC-EMS	GLUCAGON	
	Standard Delegated Orders – Medicine Reference	MED 17	Page 372
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Medication

A pancreatic hormone-insulin antagonist

Mechanism of Action

- Causes breakdown of glycogen to glucose
- Inhibits glycogen synthesis
- Elevates blood glucose levels
- Increases cardiac contractile force
- Increases heart rate

Indications

- Altered LOC where hypoglycemia is suspected and an IV route is not immediately available
- Beta blocker overdose
- Calcium channel blocker overdose

Contraindications

- Hypersensitivity to drug
- Allergy to proteins

Side Effects

- Tachycardia
- Hypertension
- Nausea/vomiting
- Allergic reaction

Dosage and Administration

ADULT: 1 mg IM may repeat in 20 min
PEDIATRIC: 0.5 mg IM/SQ may repeat in 20 min

Special Considerations

	TAMU EMRC-EMS	IBUPROFEN	
	Standard Delegated Orders – Medicine Reference	MED 18	Page 373
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(Motrin)

Medication

Nonsteroidal anti-inflammatory drug (NSAID) with significant antipyretic and analgesic properties.

Mechanism of Action

Blocks prostaglandin synthesis, inhibits platelet aggregation, and prolongs bleeding time, but does not affect prothrombin or whole blood clotting times.

Indications

Musculo-skeletal pain; aches and cramps

Contraindications

- Hypersensitivity to Aspirin or other NSAIDs
- Active peptic ulcer disease
- Bleeding abnormalities
- Severe renal disease
- Severe hepatic disease
- < 6 months of age

Side Effects

- Anxiety, confusion, depression, dizziness, drowsiness, fatigue, insomnia, tremors
- CHF, dysrhythmias, HTN, palpitations, peripheral edema, tachycardia
- Blurred vision, hearing loss, tinnitus
- Constipation, cramps, diarrhea, dry mouth, flatulence, GI hemorrhage, jaundice, nausea/vomiting, peptic ulcer
- Azotemia, hematuria, nephrotoxicity, oliguria
- Increased bleeding time
- Pruritus, purpura, rash, sweating

Dosage and Administration

May be dispensed upon patient request for musculo-skeletal pain.

ADULTS: 200 – 400 mg not to exceed a total daily dose of 1200 mg

PEDIATRIC: 10 mg/kg, not to exceed a single dose of 400 mg

Special Considerations

- Doses may be repeated every 4 – 6 hours not to exceed total daily dose of 1200 mg.
- Patients with history of cardiac decompensation should be observed closely for evidence of fluid retention and edema.
- Monitor for GI distress and signs of GI hemorrhage.
- Symptoms of acute toxicity in children are apnea, cyanosis, response only to painful stimuli, dizziness and nystagmus.

	TAMU EMRC-EMS	LABETALOL	
	Standard Delegated Orders – Medicine Reference	MED 19	Page 374
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(Normadyne, Trandate)

Medication

Labetalol is a competitive α_1 -receptor blocker as well as a nonselective beta-receptor blocker used to lower blood pressure in a hypertensive crisis.

Mechanism of Action

The β_1 blocking actions on the S.A. node, A.V. node and ventricular muscle cause negative chronotropic, dromotropic and inotropic effects. The β_2 blocking actions cause Bronchoconstriction. The alpha blocking actions lead to general vasodilation and reduced peripheral vascular resistance. The net cardiovascular effects are a decrease in B/P without reflex tachycardia or significant reduction in H.R.

Indications

- Systolic B/P >200 or a Diastolic B/P >110 with or without S/S
- Hypertensive Crisis (Systolic B/P >200 or a Diastolic B/P >110)
- Acute Coronary Syndrome in the AMI patient without heart blocks, hypotension, or STEMI precipitated by Cocaine use.

Contraindications

Absolute:

- STEMI precipitated by cocaine use
- Heart block
- Heart Rate < 60 bpm
- Systolic B/P < 100 mmHg

Relative:

- Pregnancy – 2nd and 3rd trimester
- Active CHF
- Active Asthma
- COPD

Side Effects

- | | |
|--|--|
| <ul style="list-style-type: none"> • Postural hypotension • Fever • Liver toxicity • Exacerbates CHF | <ul style="list-style-type: none"> • Exacerbates bronchospasm • Wheezing, dyspnea • Fatigue • Depression |
|--|--|

Dosage and Administration

ADULT: 10 mg IV over 1 to 2 minutes
PEDIATRIC: Not recommended

	TAMU EMRC-EMS	LABETALOL	
	Standard Delegated Orders – Medicine Reference	MED 19	Page 375
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Special Considerations

- Use with extreme caution as severe decreases in B/P can occur
- Increased hypotensive effect with Cimetidine and calcium channel blockers
- Labetalol may blunt bronchodilator effects of beta-adrenergic agonists
- Nitroglycerin may augment hypotensive effects
- Decreased effect and possible hypertensive crisis with NSAID
- There are some situations in which sympathetic stimulation is vital. For example, patients with severely damaged hearts may depend on the sympathetic drive to reach adequate ventricular function. This medication could block this drive and precipitate heart failure.

	TAMU EMRC-EMS	LIDOCAINE HCL	
	Standard Delegated Orders – Medicine Reference	MED 20	Page 376
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(Xylocaine)

Medication

Lidocaine is classified as a Class IV antiarrhythmic and a local anesthetic that is used intravenously to treat certain ventricular arrhythmias.

Mechanism of Action

Lidocaine suppresses dysrhythmias of ectopic ventricular origin and in ischemic tissue by ↓ the automaticity of ventricular pacemaker cells and the conduction system. Lidocaine elevates ventricular fibrillation threshold. Reduces non-uniformity of repolarization in the purkinje fibers and alters conduction velocity in these fibers to abolish re-entrant ventricular dysrhythmias and unidirectional ventricular tachycardia. Lidocaine has only minimal effects on atrial muscle.

Indications

- PVC's when they:
 1. occur in the context of myocardial ischemia (chest pain)
 2. occur > 6/min
 3. occur in salvos (2 or more)
 4. fall close to the T wave
 5. Multifocal
- VFib / VTach
- To prevent the recurrence of VFib or VTach after conversion
- PAI Procedure

Contraindications

- Known hypersensitivity to “amides” or “caine” medications
- Sinus bradycardia, 2° or 3° heart block, or Idioventricular rhythm
- Wolff-Parkinson-White syndrome (Lidocaine may block aberrant pathway)
- Stokes – Adams syndrome (transient heart block with syncope)

Side Effects

- May cause a fall in cardiac output and B/P
- May cause seizure-like activity when given in high doses
- May also cause tremors, lethargy, muscle twitching, and/or coma
- Clinical indicators of toxicity: Drowsiness, decreased hearing ability, paresthesias, muscle twitching, seizures, bradycardia, or heart block

	TAMU EMRC-EMS	LIDOCAINE HCL	
	Standard Delegated Orders – Medicine Reference	MED 20	Page 377
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Dosage and Administration

ADULT:

Initial: 1 – 1.5 mg/kg IV (2 – 3 mg/kg ET)
Subsequent: 0.5 mg/kg IV (1 – 1.5 mg/kg ET) Max: 3 mg/kg
Adult Infusion: 2 – 4 mg/min

PAI: 100 mg IV

PEDIATRIC:

1 mg/kg IV (2 mg/kg ET)

PAI: 0.01 mg/kg IV (minimum dose 0.1 mg max dose 0.5 mg)

Pediatric Lidocaine Infusion Dose: 20 – 50 µg/kg/min	Preparation: 100 mg lidocaine in 100 ml NS	Dosage: 20 µg/kg/min 6 drops/min per 5kg 30 µg/kg/min 9 drops/min per 5 kg 40 µg/kg/min 12 drops/min per 5 kg 50 µg/kg/min 15 drops/min per 5 kg
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Special Considerations

- Reduction of dosage should be considered in patients > 70 y/o, patients presenting with ↓ cardiac output (CHF, shock), or liver disease.

	TAMU EMRC-EMS	MAGNESIUM SULFATE	
	Standard Delegated Orders – Medicine Reference	MED 21	Page 378
<u>TOC</u>			

Medication

Magnesium Sulfate is an electrolyte salt solution with C.N.S. depressant-like properties.

Mechanism of Action

Magnesium is a cofactor in numerous enzymatic reactions and is essential for the function of the sodium-potassium ATPase pump. It acts as a physiological calcium channel blocker and blocks neuromuscular transmission of acetylcholine. Magnesium is also a potent peripheral vasodilator and increases the fibrillation threshold.

Indications

- Refractory VFib or VTach
- Torsades-de-Pointes
- Seizures accompanying eclampsia (Toxemia of pregnancy)
- Bronchospasm

Contraindications

- High degree AV block

Side Effects

- Hypotension, circulatory collapse, heart block
- Respiratory depression or paralysis
- Flaccid paralysis, depressed reflexes
- Hypocalcemia
- Flushing, sweating, hypothermia

Dosage and Administration

ADULT: 1 -2 grams IV/IO
 Infusion: Mix 1 gram in 100 ml NS infused over 10 minutes
 PEDIATRIC: 25 – 50 mg/kg IV/IO (max. 2g)

Special Considerations

- Side effects are usually from administering too rapidly
- Assess deep tendon reflexes (D.T.R.s) before, during and after administration

	TAMU EMRC-EMS	METHYLPREDNISOLONE	
	Standard Delegated Orders – Medicine Reference	MED 22	Page 379
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(SoluMedrol)

Medication

Methylprednisolone is a synthetic steroid that suppresses acute and chronic inflammation. In addition, it potentiates vascular smooth muscle relaxation and may alter airway hyperactivity. A new indication is for reduction of posttraumatic spinal cord edema.

Mechanism of Action

- Beta-adrenergic agonist activity (vascular smooth muscle relaxation)
- May stabilize cell membranes by decreasing permeability
- Increases blood pressure by increased sodium and water reabsorption (aldosterone effect)
- Increases blood sugar by stimulating gluconeogenesis
- Increases protein metabolism
- May prevent the release of histamine and excess lactic acid accumulation
- Demonstrable effects are evident in one hour

Indications

- Bronchial asthma and other bronchospastic states unresponsive to conventional treatment
- Life-threatening shock states to reduce the body's inflammatory response

Contraindications

- Use with caution in patients with GI hemorrhage and diabetes mellitus
- Systemic fungal infection

Side Effects

- No acute toxic effects for short-term therapy
- Long term therapy:
 1. Hypertension
 2. Hyperglycemia / Hypokalemia
 3. Fluid and electrolyte shifts
 4. Sodium and water retention
 5. Aggravation of diabetes mellitus

	TAMU EMRC-EMS	METHYLPREDNISOLONE	
	Standard Delegated Orders – Medicine Reference	MED 22	Page 380
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Dosage and Administration

ADULT: 125 mg SLOW IV over 3 minutes

PEDIATRIC: 2 mg/kg SLOW IV over 3 minutes

<i>Methylprednisolone Dosing Chart</i>		
Weight (kg)	Dose (mg)	Volume (ml)
5	10	0.2
10	20	0.3
15	30	0.5
20	40	0.6
25	50	0.8
30	60	1.0
35	70	1.1
40	80	1.3
45	90	1.4
50	100	1.6
55	110	1.8
60	120	1.9

Special Considerations

- Hypoglycemic responses to insulin and oral hypoglycemics may be blunted
- Oral contraceptives and estrogen drugs may increase effects
- Administer with caution in diabetes mellitus

	TAMU EMRC-EMS	MIDAZOLAM	
	Standard Delegated Orders – Medicine Reference	MED 23	Page 381
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(Versed)

Medication

Midazolam is a short acting benzodiazepine with CNS depressant, hypnotic, anticonvulsant and sedative properties. Midazolam is 3 – 4 times as potent as Diazepam on a milligram to milligram basis.

Mechanism of Action

Used for its rapid onset, Midazolam acts on GABA receptors producing anesthetic, sedation, and amnesic effects. Respiratory and cardiovascular depression are also associated with the administration of Midazolam.

Indications

- Status epilepticus and severe, recurrent convulsive seizures
- Sedation for acute stress anxiety reactions
- Sedation before cardioversion and/or intubation in conscious patients
- Used in conjunction with other medications during emergent intubation situations
- Sedation of previously intubated patients

Contraindications

- Hypersensitivity
- Pre-existing respiratory depression due to drugs or C.N.S. dysfunction

Side Effects

- | | |
|-------------------------------|------------------|
| • Respiratory depression | • Euphoria |
| • Amnesia | • Confusion |
| • Mild hypotension | • Tremor |
| • CNS depression / Drowsiness | • Slurred Speech |
| • Laryngospasm / Bronchospasm | |

Dosage and Administration

ADULT: 2 – 5 mg IV/IO/IN (IM if IV/IO unavailable: 4 – 10 mg)

PEDIATRIC: 0.1 – 0.2 mg/kg IV/IO/IM/IN

Special Considerations

- Potentiates respiratory depression and sedative effects of other CNS depressants
- Narcotics accentuates hypnotic effect
- Generally need 5 mg maximum for conscious sedation
- Reversed with flumazenil

	TAMU EMRC-EMS	MORPHINE SULFATE	
	Standard Delegated Orders – Medicine Reference	MED 24	Page 382
<u>TOC</u>			

Medication

A naturally occurring narcotic analgesic derived from the opium poppy, which effects the CNS and GI tract.

Mechanism of Action

- Morphine ↑ the patient's tolerance for pain and ↓ the perception of suffering.
- Stimulates the parasympathetic nervous system, which results in decreased peripheral vascular resistance, increased venous capacitance, venous pooling and decreased venous return to the heart.
- Depresses respiratory, cough and vasomotor center in the medulla.
- Stimulates the vomiting center in the medulla.

Indications

- Relief of severe pain in adults and children when associated with:
 1. Burns
 2. Isolated traumatic injuries
 3. Renal Calculi
- Pulmonary edema associated with CHF
- Chest pain/cardiac ischemia

Contraindications

- Known hypersensitivity
- Acute abdomen pain (unless verified Renal Calculi)
- Multi-systems trauma
- Use with extreme caution in patients with pre-existing respiratory depression, acute hypoxia (asthmatic attack) or patients with COPD
- Use with caution and in reduced dosages in the presence of other CNS Depressants

Side Effects

- | | |
|----------------------------------|--------------------------|
| • Sedation | • ↓Cough reflex |
| • Hypotension | • Constriction of pupils |
| • Respiratory depression / Apnea | • Dizziness |
| • Orthostatic hypotension | • Constipation and N/V |

Dosage and Administration

ADULT: 2 – 10 mg IV/IO or IM May repeat x 1 or per medical control

PEDIATRIC: 0.1 – 0.2 mg/kg IV/IO May repeat x 1 or per medical control
 Max single dose 2 mg
 Max dose 10 mg

	TAMU EMRC-EMS	NALOXONE	
	Standard Delegated Orders – Medicine Reference	MED 25	Page 383
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(Narcan)

Medication

Naloxone is a synthetic opioid antagonist that inhibits the analgesic effects of opiates. It is used in the management and reversal of overdoses caused by narcotics and synthetic narcotic agents.

Mechanism of Action

Naloxone antagonizes the opioid effects by competing for the same receptor sites. Naloxone should reverse stupor, coma, and respiratory depression when administered to patients who have ingested narcotic drugs. May precipitate withdrawal symptoms in patients dependent on narcotics. Some frequently used narcotics include:

- Heroin
- Morphine
- Methadone
- Codeine
- Demerol
- Dilaudid
- Darvon
- Percodan
- Fentanyl
- Stadol
- Talwin

Indications

- Known narcotic overdose
- Unconsciousness of unknown etiology

Contraindications

- Hypersensitivity
- Use with caution in narcotic-dependent patients who may experience withdrawal syndrome (including neonates of narcotic-dependent mothers)

Side Effects

- Nausea
- Rapid administration may precipitate projectile vomiting
- Severe withdrawal symptoms in the addicted patient

Dosage and Administration

ADULT: 4 – 8 mg SLOW IV, IM, IO, IN q 10 – 15 min if response seen

PEDIATRIC: 0.1 mg/kg SLOW IV, IM, IO, IN (Max: 2 mg single dose)

Special Considerations

- Since most narcotics have longer duration of action, repeated doses of Naloxone may be required.
- The patient who has satisfactorily responded to Naloxone should be kept under continued surveillance and repeated doses should be administered as necessary since the duration of action of some narcotics exceeds that of Naloxone.

	TAMU EMRC-EMS	NAPROXEN	
	Standard Delegated Orders – Medicine Reference	MED 26	Page 384
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(Aleve)

Medication

Naproxen is a non-steroidal anti-inflammatory drug (NSAID) with significant antipyretic, anti-inflammatory, and analgesic properties.

Mechanism of Action

Inhibits prostaglandin synthesis.

Indications

- Fever of any etiology
- Mild muscle ache
- Non-traumatic joint pain or inflammation
- Non-traumatic headache

Contraindications

- Known allergy or hypersensitivity
- Known hypersensitivity to ASA or other NSAIDs
- Children less than 12 years of age
- Third trimester pregnancy or breast feeding
- Active peptic ulcer

Side Effects

- May cause upset stomach; take with food, milk, or antacid
- Avoid alcohol consumption with this medication
- Increased bleeding time

Dosage and Administration

ADULT: May be dispensed upon request as 220 mg PO for musculo-skeletal pain or headache

PEDIATRIC: Not recommended

Special Considerations

- Doses may be repeated every 12 hours as needed, not to exceed 2 doses in a 24 hour period.

	TAMU EMRC-EMS	NITROGLYCERIN	
	Standard Delegated Orders – Medicine Reference	MED 27	Page 385
<u>TOC</u>			

(Nitrostat, Nitrolingual Spray)

Medication

Nitroglycerin (NTG), an organic nitrate, is a smooth muscle vasodilating agent.

Mechanism of Action

The mechanism by which NTG produces relaxation of smooth muscle is unknown. Although venous effects predominate, NTG produces, in a dose-related manner, dilation of both arterial and venous beds.

- Dilation of the post capillary vessels, including large veins, promotes peripheral pooling of blood and ↓ venous return to the heart, ↓ left ventricular end-diastolic pressure (preload).
- Arteriolar relaxation reduces systemic vascular resistance and arterial pressure (afterload).
- Myocardial O₂ consumption or demand is ↓ by both the arterial and venous effects of NTG, creating a more favorable supply-demand ratio.

Indication

- Ischemic chest pain
- Congestive heart failure

Contraindications

NTG should be used with extreme caution in patients presenting with:

- Hypersensitivity
- ICP / Head injury
- Hypotension
- Nitroglycerin, in any form, is not to be administered to patients that have taken Viagra (Sildenafil citrate) or Levitra (Vardenafil HCl) within the last **24** hours.
- Nitroglycerin is not to be administered to patients who have taken Cialis (Tadalafil) within the last **48** hours.
- Fatal hypotension has been reported when Nitroglycerin or other Nitrates are given to patients who have used Viagra or Levitra in last 24 hours, and in patients who have used Cialis in the last 48 hours.

Side Effects

- | | |
|--|---|
| <ul style="list-style-type: none"> • Throbbing Headache (means it's working) • N/V • Hypotension / Postural Hypotension | <ul style="list-style-type: none"> • Palpitations • Weakness • Vertigo |
|--|---|

Dosage and Administration

ADULT:	0.4 mg SL or MDI q 5 min PRN if systolic B/P is > than 100 mmHg
	0.8 mg SL for CHF q 5 min PRN if systolic B/P is > than 100 mmHg
PEDIATRIC:	Not recommended

	TAMU EMRC-EMS	NITROGLYCERIN	
	Standard Delegated Orders – Medicine Reference	MED 27	Page 386
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Special Considerations

- Administer to patients sitting or semi-reclined
- Excessive use may lead to the development of tolerance
- B/P should be monitored closely
- Other vasodilators may have additive hypotensive effects (Viagra or similar medication)
- Nitroglycerin decomposes when exposed to light or heat
- Loses potency after prolonged storage. Replace stock every 4 – 6 months – label a newly opened bottle with the date (applies to NTG tablets)

	TAMU EMRC-EMS	NORMAL SALINE	
	Standard Delegated Orders – Medicine Reference	MED 28	Page 387
<u>TOC</u>			

(0.9% Sodium Chloride – Intravenous Solution)

Medication

Isotonic crystalloid salt solution used for intravenous infusion and intravenous medium.

Mechanism of Action

- Expands circulating volume by approximating sodium content of the blood. Sodium Chloride passes out of the blood stream quite rapidly, especially when normal renal function and renal blood flow are present.
- Each liter provides 154 mEq of sodium and 154 mEq of chloride.

Indications

- Used to maintain a patent Intravenous access
- Used in hypovolemic and/or dehydration states for any reason
- Used to facilitate the excretion of thick mucous plugs from the lungs
- Used for dilution of medications and/or as a flushing agent for rapid IV medication administration
- Used as an irrigation solution for eyes and wounds

Contraindications

Use with caution with CHF

Side Effects

- Fluid overload / Edema
- Electrolyte imbalance
- Hypertension

Dosage and Administration

ADULT: TKO for general access, IV fluid bolus 250 – 500 cc for rapid administration and fluid resuscitation

PEDIATRIC: TKO for general access, 20 ml/kg IV or IO infused rapidly for fluid resuscitation

Special Considerations

- **Reassess and repeat fluid bolus if poor perfusion is observed**
- Frequently auscultate breath sounds for rales

	TAMU EMRC-EMS	OXYGEN	
	Standard Delegated Orders – Medicine Reference	MED 29	Page 388
<u>TOC</u>			

Medication

An element – utilized as the primary energy source for the development and maintenance of life. Required by most cellular activities in order to maintain the homeostasis within the body.

Mechanism of Action

Oxygen is utilized in all cellular activity occurring within the body, such as metabolism. When cellular functions occur in a hypoxic or anoxic state the cells utilize other sources of energy, such as fat. This causes an accumulation of harmful by-products (lactic acid) which may lead to certain death if not corrected.

Indications

- At the discretion of the EMS personnel
- Treat and prevent hypoxemia
- Decrease myocardial work and respiratory effort
- Any major illness or injury
- Saturations below 95%
- Saturations below 85% indicate the need for ventilatory assistance and oxygen therapy

Contraindications

None for short term emergency use

Side Effects

None for short term emergency use

Dosage and Administration

Pulse oximetry and other clinical indicators should determine therapy.

- Nasal cannula: 1 – 6 L.P.M (provides 24 – 44% oxygen)
- Simple mask: 6 – 10 L.P.M. (provides 40 – 60% oxygen)
- Non-rebreather mask: 10 – 15 L.P.M. (provides > 90% oxygen)
- Bag-valve-mask: 15 L.P.M. with reservoir (provides > 90% oxygen)

Special Considerations

- Humidifying oxygen using low flow devices such as nasal cannulas should prevent drying of nasal and pulmonary mucosa.
- Do not withhold oxygen from a COPD patient if he/she needs it. Initially try low flows via nasal cannula but, if more is needed, supply it and carefully monitor ventilations.

	TAMU EMRC-EMS	PROMETHAZINE	
	Standard Delegated Orders – Medicine Reference	MED 30	Page 389
<u>TOC</u>			

(Phenergan)

Medication

Promethazine is a phenothiazine with sedative, antiemetic, antihistamine and anticholinergic properties.

Mechanism of Action

It competitively blocks histamine (H₁) receptors. It does not block the release of histamine. The central anti-muscarinic actions of antihistamines are probably responsible for the antiemetic and anti-vertigo effects.

Reducing stimuli to the brainstem reticular system probably causes the C.N.S. sedation. Additionally, Promethazine potentiates the effects of narcotics.

Indications

Nausea / Vomiting

Contraindications

- Hypersensitivity
- Altered Mental Status
- Hypotension
- Large ingestion of sedatives
- Use with caution with asthma patients (thickens mucous)
- Use with caution with patients who have a history of Epilepsy (may trigger seizure)

Side Effects

- May cause sedation, confusion, or restlessness
- Hypotension and hypertension
- Extrapyramidal reactions (dystonia)
- Urinary retention

Dosage and Administration

ADULT: 12.5 to 25 mg IV/IO/IM
(IV/IO only dilute in 10 ml over 1 – 2 minutes)

PEDIATRICS: 0.5 mg/kg IV/IO/IM, up to 12.5 mg
(IV/IO only dilute in 10 ml over 1 – 2 minutes)

Special Considerations

Extrapyramidal side effects generally respond to Diphenhydramine administration

	TAMU EMRC-EMS	SODIUM BICARBONATE	
	Standard Delegated Orders – Medicine Reference	MED 31	Page 390
<u>TOC</u>			

Medicine

Sodium bicarbonate is a hypertonic solution used as a systemic alkalizer (buffer). In water, it dissociates to provide sodium (Na^+) and bicarbonate (HCO_3^-) ions.

- Sodium is the principal cation of the extracellular fluid and plays a large part in the therapy of fluid and electrolyte disturbances.
- Bicarbonate is a normal constituent of body fluids.

Mechanism of Action

- Reacts with hydrogen ions to form water and carbon dioxide and thereby can act to buffer metabolic acidosis.
- It corrects metabolic acidosis by neutralizing excess acid in the blood, helping to return the blood towards a physiologic pH, in which metabolic processes and sympathomimetic agents work more efficiently.
- Increasing the plasma concentration of bicarbonate causes blood pH to rise.
- In tricyclic antidepressant overdose, alkalization of serum pH increases protein binding of TCA's, this significantly lessens the potential for toxicity.
- Produces paradoxical acidosis due to the production of carbon dioxide, which is freely diffusible into myocardial and cerebral cells.

Indications

- Cardiac arrest situations with a down time > 10 minutes and the patient is intubated
- TCA overdose (ECG: QRS complex widening by 50%)
- Known preexisting bicarbonate-responsive acidosis

Contraindications

- No contraindications when used for indicated life-threatening emergencies
- CHF – cannot tolerate a salt load
- Metabolic and respiratory alkalosis
- Use with caution in the dehydrated patient due to vomiting (Chloride loss)

Side Effects

- Metabolic alkalosis, hypernatremia, hyperkalemia, and hyperosmolality
- Electrolyte imbalance (tetany)
- Seizures
- Renal Calculi (Kidney stone)

Dosage and Administration

ADULT & PEDIATRIC:	Initial:	1 mEq/kg IV/IO of an 8.4% solution
	Subsequent:	0.5 mEq/kg IV/IO of an 8.4% solution

Special Considerations

- Administration should be accompanied by controlled hyperventilation to blow off excess CO_2 . Bicarbonate administration produces carbon dioxide, which crosses cell membranes more rapidly than bicarbonate, potentially worsening intracellular acidosis.
- May precipitate with Epinephrine and in calcium solutions
- May increase edematous or sodium-retaining states
- May worsen congestive heart failure

	TAMU EMRC-EMS	SUCCINYLCHOLINE CHLORIDE	
	Standard Delegated Orders – Medicine Reference	MED 32	Page 391
<u>TOC</u>			

(Anectine)

Medication

A depolarizing neuromuscular blocking agent used specifically to facilitate endotracheal intubation by paralysis of muscular tone.

Mechanism of Action

Succinylcholine produces complete neuromuscular paralysis by depolarizing the neuromuscular end plate and preventing repolarization by binding to the receptors for acetylcholine. In doing so, it produces minute, but visible muscle contractions called fasciculation's. The paralysis following administration is selective, initially involving consecutively the levator muscles of the face, muscles of the glottis, and finally the intercostals, diaphragm and all other muscles. In general for therapeutic dosages, the onset time is $\approx$ 45 seconds and the effects last $\approx$ 5 minutes.

Indications

To induce paralysis in order to facilitate endotracheal intubation

Contraindications

- Inability to control airway or support ventilations with a BVM
- Malignant Hyperthermia
- Penetrating eye injury (Succinylcholine increases intraocular pressure)
- Patients at risk for hyperkalemia:
 1. Old burns (>7 days or more post-burn)
 2. Spinal cord injury (>24 hours)
 3. Severe renal failure

Side Effects

- Apnea, Hypoventilation
- Malignant Hyperthermia
- Hypertension
- Arrhythmias
- Histamine mediated signs and symptoms
 1. Hypotension
 2. Bronchoconstriction
 3. $\uparrow$ salivation, $\uparrow$ intragastric pressure
 4. Rash and flushing
- $\uparrow$ intraocular pressure
- Hyperkalemia and exacerbation of hyperkalemia in trauma patients

Dosage and Administration

ADULT: 100 mg IV/IO

PEDIATRIC: 1 mg/kg IV/IO

	TAMU EMRC-EMS	SUCCINYLCHOLINE CHLORIDE	
	Standard Delegated Orders – Medicine Reference	MED 32	Page 392
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Special Considerations

- Patients with neuromuscular diseases may be resistant or very sensitive to the effects of Succinylcholine
- All monitors (ECG, B/P cuff, pulse oximeter) and intubation equipment shall be in place before inducing the patient. Should the intubation be unsuccessful, the patient should be oxygenated and ventilated prior to any further attempts. Equipment to perform an emergency needle or surgical cricothyrotomy should be readily accessible.
- Succinylcholine alone has no effect on perception, consciousness or pain. Administering an analgesic or sedative prior to administering this agent should blunt this.
- Diazepam may reduce duration of action
- Lidocaine administration, prior to paralytic administration, reduces the rise in I.C.P. associated with paralytic endotracheal intubation
- Use with caution in patients with any of the following:
 1. Personal or familial history of malignant hypertension or hyperthermia
 2. Elderly or debilitated patients
 3. Severe burns or trauma
 4. Degenerative or dystrophic neuromuscular disease, myasthenia gravis
 5. Glaucoma, eye surgery and pheochromocytoma

	TAMU EMRC-EMS	TETRACAINE OPHTHALMIC SOLUTION	
	Standard Delegated Orders – Medicine Reference	MED 33	Page 393
<u>TOC</u>			

Medication

Tetracaine is a local anesthetic agent of the ester linkage type, related to procaine, used topically and by infiltration.

Mechanism of Action

Tetracaine prevents initiation and transmission of nerve impulses thereby effecting local anesthesia. Onset of anesthesia usually begins within 30 seconds and lasts a relatively short period.

Indications

For situations in which a rapid and short acting topical ophthalmic anesthetic is indicated, Tetracaine may be used. It is most often used in the field treatment of burns to the eyes.

Contraindications

- Known hypersensitivity
- Open or disrupted globe

Side Effects

- Stinging
- Burning
- Conjunctival redness

Dosage and Administration

ADULT & PEDIATRIC: 1 – 2 drops prn in injured eye(s)

Special Considerations

- Prolonged use results in diminished duration of anesthesia.
- Patients should be advised not to touch or rub the eye(s) until the effect of the anesthetic has worn off.
- On very rare occasions, a severe, immediate allergic corneal reaction may occur characterized by acute diffuse epithelial keratitis with filament formation and/or sloughing of large areas of necrotic epithelium.

	TAMU EMRC-EMS	THIAMINE	
	Standard Delegated Orders – Medicine Reference	MED 34	Page 394
<u>TOC</u>			

Medication

A vitamin B complex (B1), that occurs naturally and is produced synthetically. Most vitamins required by the body are obtained through dietary intake. But in certain states, such as alcoholism and malnutrition, the intake, absorption, and use of Thiamine may be severely affected. The brain is extremely sensitive to Thiamine deficiency.

Mechanism of Action

Thiamine is essential for the normal metabolism of carbohydrates and fats. Thiamine combines with ATP to form Thiamine pyrophosphate coenzyme, a necessary component for carbohydrate metabolism.

Indications

- Patients presenting with S/S of alcohol toxicity, Wernicke's syndrome or Korsakoff's psychosis.
- Unconscious patient of unknown etiology. Thiamine should be administered prior to D₅₀ and Naloxone.

Contraindications

Known hypersensitivity

Side Effects

- Hypotension (from rapid injection or large dose)
- Diaphoresis
- N/V
- Weakness
- Tingling

Dosage and Administration

ADULT: 100 mg IV/IO or IM
or
50 mg IV/IO and 50 mg IM
PEDIATRIC: 10 – 25 mg IV/IO or IM

Special Considerations

- In alcoholics, Thiamine deficiency causes Wernicke's syndrome, an acute and reversible encephalopathy (brain dysfunction) characterized by:
 1. Ataxia (defective muscular coordination)
 2. Eye muscle weakness
 3. Mental derangements
- A more serious complication of Thiamine deficiency is known as Korsakoff's psychosis, a memory disorder that may be irreversible once it becomes established. Since Thiamine is utilized in carbohydrate metabolism, these syndromes may be precipitated by the administration of dextrose to the alcoholic with pre-existing Thiamine deficiency.

	TAMU EMRC-EMS	VASOPRESSIN	
	Standard Delegated Orders – Medicine Reference	MED 35	Page 395
<u>TOC</u>			

(Pitressin)

Medication

Vasopressin is an antidiuretic hormone naturally produced by the body. Its primary function in the body is to regulate extracellular fluid volume by affecting renal handling of water.

Mechanism of Action

- Potent vasoconstrictor
- Increased blood pressure and systemic vascular resistance
- Increases cerebral blood flow to a greater degree than epinephrine
- Improves cerebral oxygenation
- Decreases:
 - Cardiac output
 - Heart rate
 - Left ventricular oxygen consumption
 - Myocardial contractility

Indications

- Ventricular fibrillation / Pulseless Ventricular Tachycardia
- PEA
- Asystole

Contraindications

- Bronchospasm
- Epilepsy
- Heart disease
- Kidney disease
- Heart or blood vessel disease

Side Effects

- Abdominal or stomach cramping
- Dizziness
- Nausea and/or vomiting
- Chest pain
- Coma
- Confusion
- Seizures
- Swelling to face, hands, feet or mouth

Dosage and Administration

- Adults: 40 U IV/IO
May repeat once in 20 minutes
- Pediatrics: Not recommended

Special Considerations

- None in cardiac arrest

	TAMU EMRC-EMS	VECURONIUM	
	Standard Delegated Orders – Medicine Reference	MED 36	Page 396
<u>TOC</u>			

(Norcuron)

Medication

A non-depolarizing neuromuscular blocking agent

Mechanism of Action

Through competitive inhibition, Vecuronium blocks cholinergic receptors at the motor end plate initiating a neuromuscular paralysis within $\approx$ 3 minutes that lasts $\approx$ 25 – 30 minutes.

Indications

- To sustain neuromuscular paralysis after a patient has been completely paralyzed to facilitate intubation
- Provide muscle relaxation during mechanical ventilation

Contraindications

- Hypersensitivity
- Patient who is not intubated
- Myasthenia gravis

Side Effects

- Bradycardia
- Apnea, Hypoventilation

Dosage and Administration

ADULT: 10 mg IV/IO

PEDIATRIC: No protocol

Special Considerations

None

	TAMU EMRC-EMS	ZOFRAN	
	Standard Delegated Orders – Medicine Reference	MED 37	Page 397
<u>TOC</u>			

Ondansetron (Zofran)

Medication

Zofran blocks the actions of chemicals in the body that can trigger nausea and vomiting

Mechanism of Action

Blocks the effects of serotonin at 5-HT₃-receptor sites (selective antagonist) located in the vagal nerve terminals and the chemoreceptor trigger zone in the CNS.

Indications

- Prevention of nausea and vomiting, especially associated with chemotherapy or radiation therapy

Contraindications and Precautions

Contraindicated in:

- Hypersensitivity
- Orally disintegrating tablets contain aspartame and should not be used in patients with phenylketonuria

Use Cautiously in:

- Liver impairment (daily dose not to exceed 8 mg)
- Abdominal surgery (may mask ileus)
- Pregnancy, lactation, or children ≤ 3 yrs (safety not established)

Side Effects

- Headache, dizziness, drowsiness and fatigue
- Constipation, diarrhea, abdominal pain
- Dry mouth

Dosage and Administration

ADULT: 8mg of oral disintegrating tablet (ODT) PO
May be repeated every 15 mins

PEDIATRIC: (8kg-30kg) 4mg ODT PO
(> 30kg) 8mg ODT PO
May be repeated every 15 mins

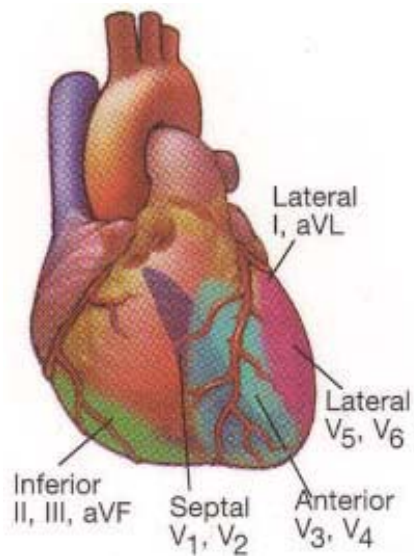
Do not attempt to push the Ondansetron (Zofran) ODT Tablets through the foil backing. With dry hands, PEEL BACK the foil backing of 1 blister and GENTLY remove the tablet. IMMEDIATELY place the tablet on top of the tongue where it will dissolve in seconds, then swallow with saliva. Administration with liquid is not necessary.

APPENDIX

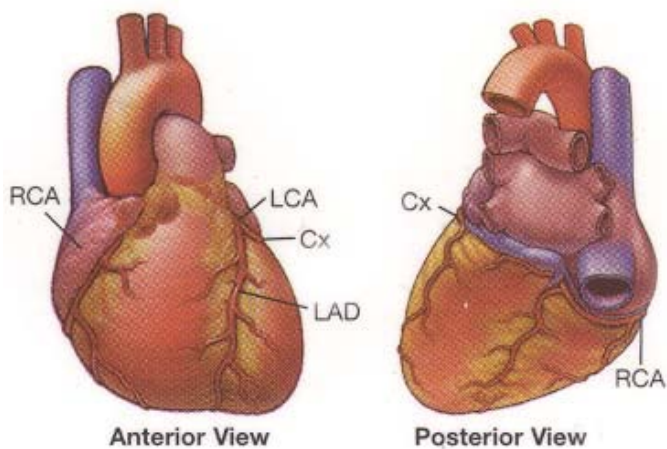


	TAMU EMRC-EMS	12 LEAD GUIDE	
	Standard Delegated Orders – Appendix	APP 01	Page 399
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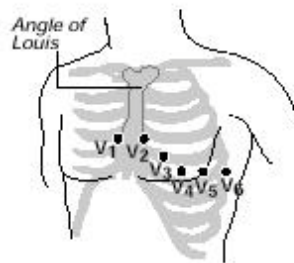
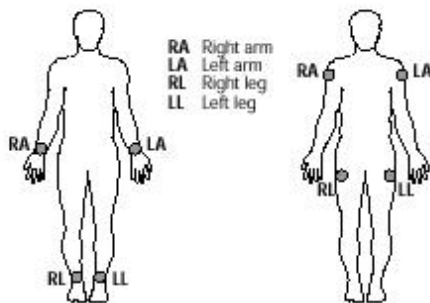
12-Lead ECG in Relation to Anatomy of the Heart



I lateral	aVR	V₁ septal	V₄ anterior
II inferior	aVL lateral	V₂ septal	V₅ lateral
III inferior	aVF inferior	V₃ anterior	V₆ lateral



	TAMU EMRC-EMS	12 LEAD GUIDE	
	Standard Delegated Orders – Appendix	APP 01	Page 400
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Precordial lead electrode placement

Lead	Location
V1	Fourth intercostal space to the right of the sternum.
V2	Fourth intercostal space to the left of the sternum.
V3	Directly between leads V2 and V4.
V4	Fifth intercostal space at midclavicular line.
V5	Level with V4 at left anterior axillary line.
V6	Level with V5 at left midaxillary line (directly under the midpoint of the armpit).

■

	TAMU EMRC-EMS	AMBULANCE ACCEPTABLE ABBREVIATIONS	
	Standard Delegated Orders – Appendix	APP 02	Page 401
<u>TOC</u>			

Below is a list of acceptable abbreviations that may be used for filing Medicare claims. Please contact the clinical department if additional abbreviations become common in the industry so that we may update the list.

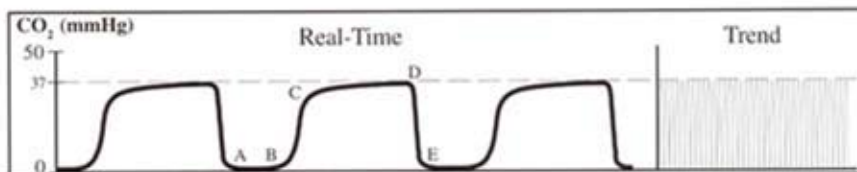
Abd	Abdomen, abdominal	GEN	General
ABG	Arterial blood gases	Hx	History
A-fib	Atrial fibrillation	IM	Intramuscular
ALS	Advanced life support	inj, inj	Injuries
ASA	Aspirin	IV	Intravenous
BBB	Bundle branch block	LOC	Loss of consciousness
bilat.	Bilateral	MVA	Motor vehicle accident
BLS	Basic life support	NTG	Nitroglycerine
BP, B/P	Blood pressure	O ₂	Oxygen
c/c	Chief complaint	OBS	Organic brain syndrome
CHF	Congestive heart failure	PVS, PVCs	Premature ventricular contractions
CNS	Central nervous system	RBBB	Right bundle branch block
COPD	Chronic obstructive pulmonary disease	resp.	Respiration
CPR	Cardiopulmonary resuscitation	SOB	Shortness of breath
C-spine	Cervical spine	ST	Street
CVA	Cerebrovascular accident	THPY	Therapy
DM	Diabetes mellitus	TIA	Transient ischemic attack
DOA	Dead on arrival	TKO	To keep open
EKG	Electrocardiogram	Tx	Treatment
ER	Emergency room	Vfib, V-fib	Ventricular fibrillation
ETOH	Ethanol alcohol	VS, V/S	Vital Signs
fx	Fracture	Vtach/V-tach	Ventricular tachycardia

	TAMU EMRC-EMS	APGAR SCORE	
	Standard Delegated Orders – Appedix	APP 03	Page 402
<u>TOC</u>			

SIGN	0	1	2
Heart Rate	Absent	Below 100	Over 100
Respiration (effort)	Absent	Slow and irregular	Normal crying
Muscle tone	Limp	Some flexion- extremities	Active; good motion in extremities
Irritability	No Response	Crying; some motion	Crying; vigorous
Skin Color	Bluish or paleness	Pink or typical newborn color; hands and feet are blue	Pink or typical newborn color; entire body



Normal Capnogram

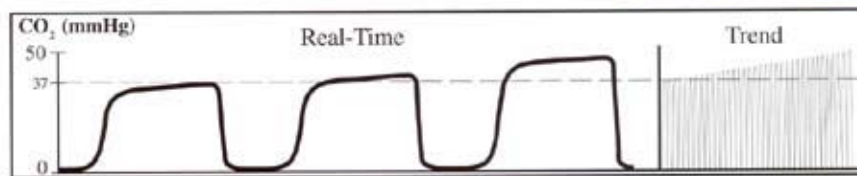
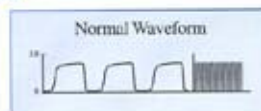


The "normal" capnogram is a waveform which represents the varying CO₂ level throughout the breath cycle.

Waveform Characteristics:

- A-B Baseline
- B-C Expiratory Upstroke
- C-D Expiratory Plateau
- D End Tidal Concentration
- D-E Inspiration Begins

Increasing ETCO₂ Level



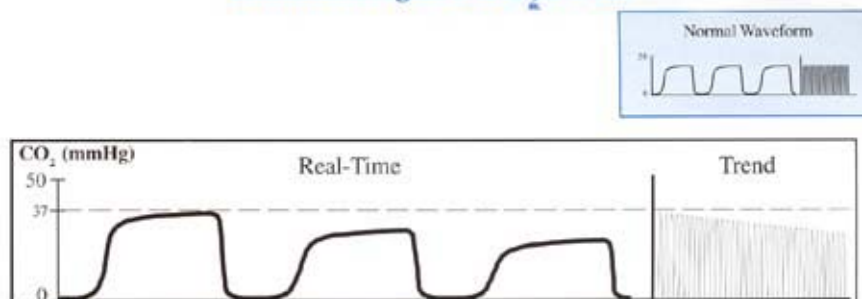
An increase in the level of ETCO₂ from previous levels.

Possible Causes:

- Decrease in respiratory rate (hypoventilation)
- Decrease in tidal volume (hypoventilation)
- Increase in metabolic rate
- Rapid rise in body temperature (malignant hyperthermia)

	TAMU EMRC-EMS	CAPNOGRAPHY	
	Standard Delegated Orders – Appendix	APP 04	Page 404
TOC			

Decreasing $ETCO_2$ Level

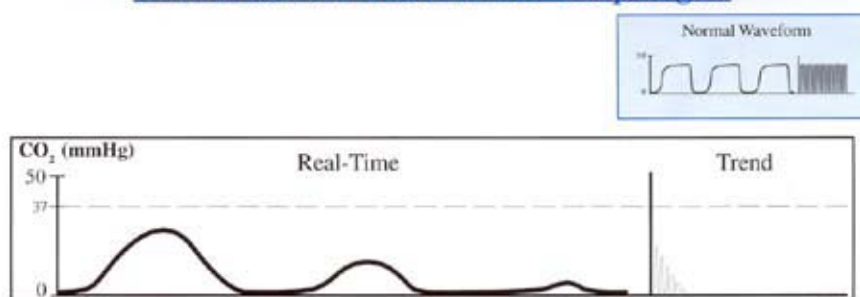


A decrease in the level of $ETCO_2$ from previous levels.

Possible Causes:

- Increase in respiratory rate (hyperventilation)
- Increase in tidal volume (hyperventilation)
- Decrease in metabolic rate
- Fall in body temperature

Endotracheal Tube in the Esophagus

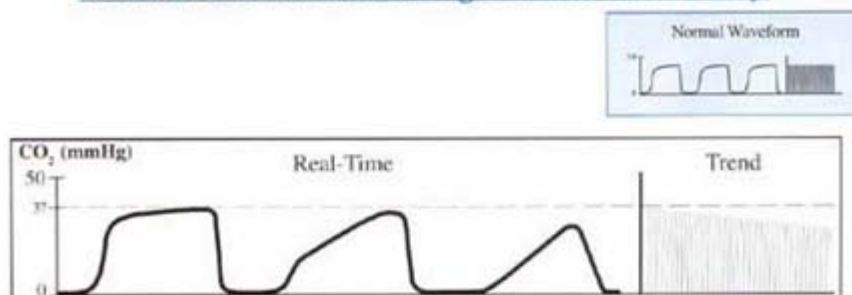


Waveform Evaluation:

A normal capnogram is the best available evidence that the ET tube is correctly positioned and that proper ventilation is occurring. When the ET tube is placed in the esophagus, either no CO_2 is sensed or only small transient waveforms are present.



Obstruction in Breathing Circuit or Airway

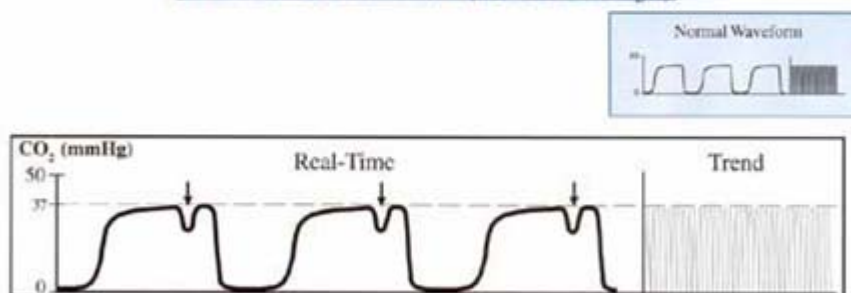


Obstructed expiratory gas flow is noted as a change in the slope of the ascending limb of the capnogram (the expiratory plateau may be absent).

Possible Causes:

- Obstruction in the expiratory limb of the breathing circuit
- Presence of a foreign body in the upper airway
- Partially kinked or occluded artificial airway
- Bronchospasm

Muscle Relaxants (curare cleft)



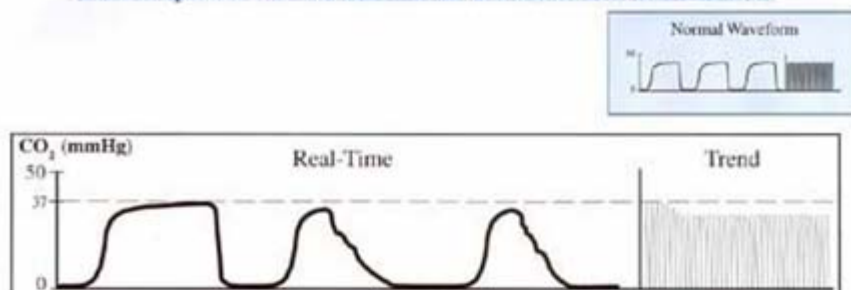
Clefts are seen in the plateau portion of the capnogram. They appear when the action of the muscle relaxant begins to subside and spontaneous ventilation returns.

Characteristics:

- Depth of the cleft is inversely proportional to the degree of drug activity
- Position is fairly constant on the same patient but not necessarily present with every breath



Inadequate Seal Around Endotracheal Tube

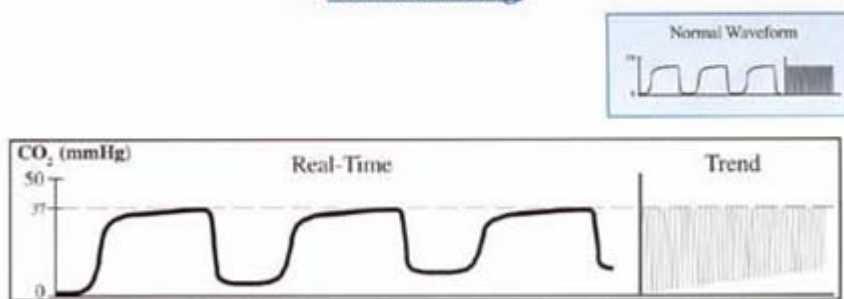


The downward slope of the plateau blends in with the descending limb.

Possible Causes:

- A leaky or deflated endotracheal or tracheostomy cuff
- An artificial airway that is too small for the patient

Rebreathing

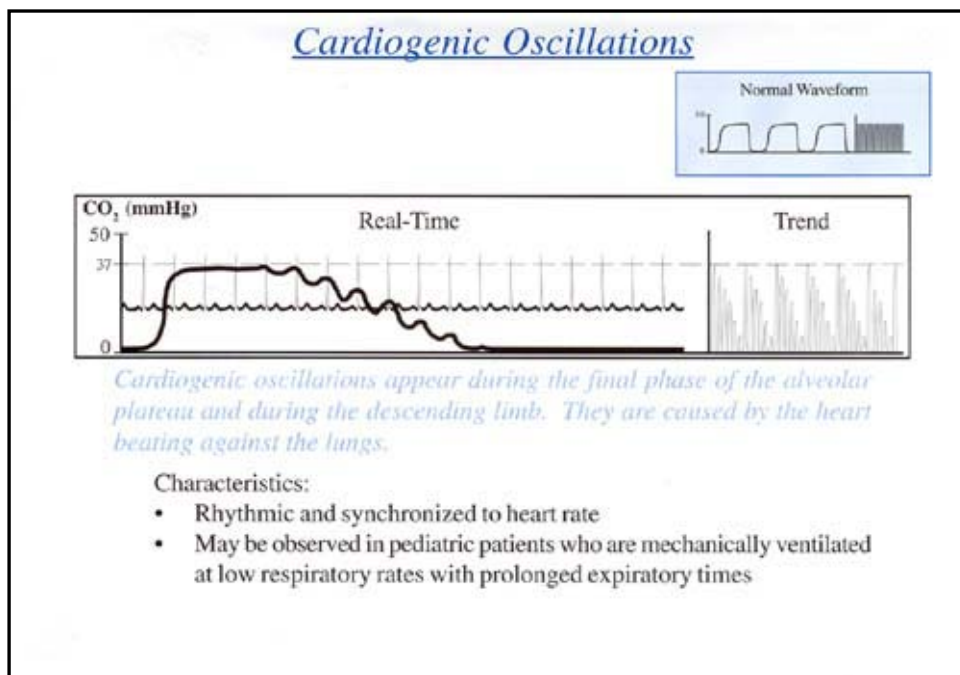


Elevation of the baseline indicates rebreathing (may also show a corresponding increase in ETCO_2).

Possible Causes:

- Faulty expiratory valve
- Inadequate inspiratory flow
- Malfunction of a CO_2 absorber system
- Partial rebreathing circuits
- Insufficient expiratory time

	TAMU EMRC-EMS	CAPNOGRAPHY	
	Standard Delegated Orders – Appendix	APP 04	Page 407
TOC			



	TAMU EMRC-EMS	GLASGOW COMA SCALE ADULT AND PEDIATRIC COMBINED	
	Standard Delegated Orders – Appendix	APP 05	Page 408
TOC			

GLASGOW COMA SCALE (GCS): Adult and Pediatric Combined GCS

Note: Modifications for age appropriate response for infant/young children are typed in bold print.

EYE OPENING RESPONSE	BEST VERBAL RESPONSE	BEST MOTOR RESPONSE
4 pts = Open spontaneously	5 pts = Oriented & converses Appropriate words and phrases Cries appropriately, coos, babbles	6 pts = Obeys commands Normal spontaneous movement
3 pts = To verbal stimuli To speech, to shout	4 pts = Disoriented & converses Irritable cry	5 pts = Localizes pain Withdraws to touch
2 pts = To painful stimuli	3 pts = Inappropriate words Inappropriate crying/screaming	4 pts = Flexion withdrawal Withdraws to pain
1 pt = No response	2 pts = Incomprehensible sounds / words Grunts	3 pts = Flexion abnormal (decorticate)
	1 pt = No response	2 pts = Extension (decerebrate)
		1 pt = No response
Risk of injury is high with GCS < 14. COMA is defined by GCS = 8		
Any patient with a GCS < 9, consider intubation and hyperventilate at 12 to 20 breaths per minute to reduce cerebral swelling.		

	TAMU EMRC-EMS	INFUSION CALCULATIONS	
	Standard Delegated Orders – Appendix	APP 06	Page 409
<u>TOC</u>			

Drip Rates For IV Tubing

	Macro Drip IV Tubing 10 gtts/ml	Mini Drip IV Tubing 60 gtts/ml
mL/hr	gtts/min	gtts/min
30 This is TKO	5	30
45	8	45
60	10	60
75	13	75
100	17	100
125	21	-
150	25	-
175	29	-
200	33	-
225	38	-
250	42	-
300	50	-

DOPAMINE Drip Rate (60gtt set)

400 mg of Dopamine in 250 cc Solution

	5 mcg	10 mcg	15 mcg	20 mcg
Weight/Kg	gtts/min	gtts/min	gtts/min	gtts/min
40	8	16	24	36
50	10	20	30	40
60	12	24	36	48
70	14	28	42	56
80	16	32	48	64
90	18	36	54	72
100	20	40	60	80
110	22	44	66	88
120	24	48	72	96
130	26	52	78	104
140	28	56	84	112
150	30	60	90	120
160	32	64	96	128
170	34	68	102	136
180	36	72	108	144
190	38	76	114	152
200	40	80	120	160

	TAMU EMRC-EMS	INFUSION CALCULATIONS	
	Standard Delegated Orders – Appendix	APP 06	Page 410
<u>TOC</u>			

LIDOCAINE Drip Rate

For pre-mixed bag of 2 g / 500 ml (4mg/ml)

Lidocaine Drip Rate (mg/min dose)	
mg/min	ml/hr
1	15
2	30
3	45
4	60

Pediatric Lidocaine Infusion

Dose: 20 – 50 µg/kg/min	Preparation: 100 mg lidocaine in 100 ml NS	Dosage: 20 µg/kg/min 6 drops/min per 5 kg 30 µg/kg/min 9 drops/min per 5 kg 40 µg/kg/min 12 drops/min per 5 kg 50 µg/kg/min 15 drops/min per 5 kg
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	TAMU EMRC-EMS	MALLAMPATI SIGNS	
	Standard Delegated Orders – Appendix	APP 07	Page 411
<u>TOC</u>			

Mallampati Signs as Indicators of Difficult Intubation



Class I: soft palate, uvula,
fauces, pillars visible

No difficulty



Class II: soft palate,
uvula, fauces visible

No difficulty



Class III: soft palate, base
of uvula visible



Class IV: hard palate
only visible

	TAMU EMRC-EMS	OXYGEN DURATION	
	Standard Delegated Orders – Appendix	APP 08	Page 412
TOC			

Formula for Calculating Oxygen Duration

Gage Pressure – 200 psi x Cylinder constant = Duration in Min					
<i>Cylinder Endurance</i>					
Cylinder Size	D	E	G	M	H/k
Cylinder Constants	0.16	0.28	2.41	1.56	3.15
Capacity (liters)	300	600	1000	3450	6500
Flow Rate (liters/min)					
2	2:30	5:00	8:20	28:45	54:00
4	1:15	2:30	4:10	14:20	27:00
6	0:50	1:40	2:45	9:35	18:00
8	0:35	1:10	2:05	7:10	13:30
10	0:30	1:00	1:40	5:45	11:00
15	0:20	0:40	1:05	3:50	7:15

Endurance times in hours and minutes are approximations based on full tank pressures

<i>O₂ Flow Rates and %</i>		
O ₂ Device	Flow Rate	O ₂ %
Nasal Cannula	3 – 6 LPM	25 – 40%
Simple Face Mask	6 – 12 LPM	40 – 60%
NRB Mask	10 – 12 LPM	90 – 100%
BVM	10 – 15 LPM	100% with Reservoir

	TAMU EMRC-EMS	PAIN ASSESSMENT	
	Standard Delegated Orders – Appendix	APP 09	Page 413
<u>TOC</u>			

Assessing Pain

Onset/Origin – What were you doing when the pain began? Did your stomach begin to hurt immediately after you were kicked by the horse (somatic) or several hours later after you vomited (visceral)? Somatic pain usually comes on abruptly while visceral pain more gradually.

Provokes – What makes the pain worse or better? Does your chest hurt each time you take a breath and move your intercostals muscles (somatic) or is it made worse with exertion and anxiety (visceral)?

Quality – What does the pain feel like? Is it sharp like a stabbing pain (somatic) or dull like a throbbing ache or pressure (visceral)?

Referred/Region – Where does it hurt? Is your pain only in your shoulder you injured (somatic), or does the pain radiate from your abdomen into your back (visceral)?

Severity – Can you rate your pain on a scale of 1 to 10?

Time – How long have you had this pain? Has it been there only since the injury (somatic) or for many months (neuropathic)?

The Wong-Baker Faces Pain Rating Scale



Designed for children aged 3 years and older, the Wong-Baker Faces Pain Rating Scale is also helpful for elderly patients who may be cognitively impaired. It offers a visual description for those who don't have the verbal skills to explain how their symptoms make them feel.

To use this scale, you should explain that each face shows how a person in pain is feeling. That is, a person may feel happy because he or she has no pain (hurt), or a person may feel sad because he or she has some or a lot of pain.

Face 0 is very happy because he or she doesn't hurt at all.

Face 1 hurts just a little bit.

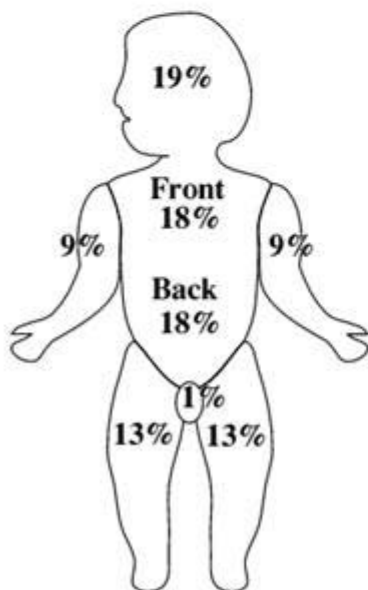
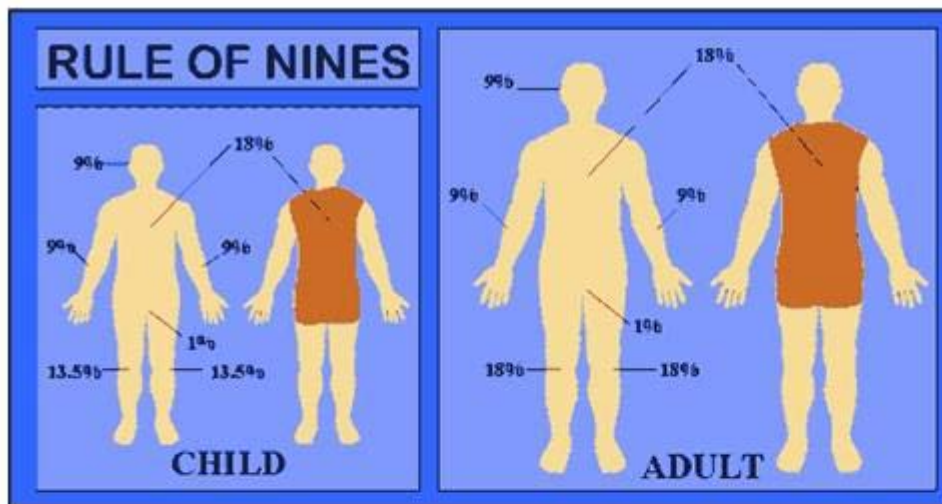
Face 3 hurts even more.

Face 4 hurts a whole lot.

Face 5 hurts as much as you can imagine, although you don't have to be crying to feel this bad.

You should point to each face using the words to describe the pain intensity. The patient should then choose the face that best describes how they feel.

	TAMU EMRC-EMS	RULE OF NINES	
	Standard Delegated Orders – Appendix	APP 10	Page 414
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	TAMU EMRC-EMS	SUBJECT IN CUSTODY RISK ASSESSMENT SCALE	
	Standard Delegated Orders – Appendix	APP 11	Page 415
<u>TOC</u>			

SUBJECT IN CUSTODY RISK ASSESSMENT SCALE (SICRAS)

The Subject in Custody Risk Assessment Scale was developed to provide Law Enforcement, Corrections, and EMS Personnel with a means to rapidly assess an in-custody subject's risk of sudden death based on known symptoms and risk factors.

Directions:

Begin at the first observed sign or symptom. Add the numbers for each sign or symptom which applies.

Alcohol Intoxication	1
Acute Alcohol Intoxication (BAC 0.25 or above)	3
History of Alcoholism	2
Cocaine Intoxication	4
Methamphetamine Intoxication	3
Drug Intoxication (other)	2
Bizarre Behavior	2
Shouting	2
Paranoia	2
Violence Against Others	3
Above Normal Physical Strength	2
Sudden Tranquility / Lethargy	3
Moderate Physical Activity	2
Intense Physical Activity	3
Obesity	3
"Big Bellies"	1
Hyperthermia	2
Hypotonicity of Skeletal Muscles	1
Antipsychotic Drug Use	2
History of Schizophrenia	2
Male	1
Ineffectiveness of OC Spray	2
Cyanosis of Lip/Nail Beds	5
Confusion - Disorientation	3

A score 16 or above indicated the subject is at extreme risk for sudden in-custody death syndrome. Immediate medical attention is necessary.

	TAMU EMRC-EMS	SUBJECT IN CUSTODY RISK ASSESSMENT SCALE	
	Standard Delegated Orders – Appendix	APP 11	Page 416
<u>TOC</u>			

Score 10 – 16

Subject is at HIGH risk for Subject in Custody Death Syndrome (SICDS). Immediate evaluation by EMS personnel is necessary. Medical treatment may be warranted. Subject should be closely monitored.

Score 5 – 10

Subject is at MODERATE risk for SICDS. Subject should be reevaluated by another officer/provider familiar with the SICRAS system and SICDS. Subject should be monitored by police, corrections, and/or EMS personnel.

Score 0 – 5

Subject is at LOW risk for SICDS based on known risk factors. Personnel should be watchful for any signs of distress which would preclude the SICRAS score.

The following conditions or circumstances represent serious, or immediate threats to safety which necessitate immediate medical treatment or evaluation and supersede the Subject in Custody Risk Assessment Scale.

- Loss of consciousness
- Seizure
- Anaphylactic shock
- Respiratory rate < 6 per minute
- Resting heart rate < 40 or > 140
- Severe headache
- Medical Shock (any cause)
- Chest pain
- Gagging, gasping, or choking > 4 minutes after OC ingestion
- Obvious respiratory distress

The SICRAS and other guidelines presented here cover only conditions and circumstances known to date. It is impossible for us to cover all circumstances with which personnel may be faced. An officer should rely on his common sense, experience and training. A good rule of thumb is that when conducting an ABCs survey of a subject, any obvious impairment of the Airway, Breathing, or Circulation requires evaluation by medical personnel. When in doubt, have it checked out.

	TAMU EMRC-EMS	TAMU STROKE SCALE	
	Standard Delegated Orders – Appendix	APP 12	Page 417
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TAMU-EMS Stroke Assessment Scale

FACIAL DROOP

- BOTH SIDES OF THE FACE MOVE EQUALLY
- ONE SIDE OF FACE DOES NOT MOVE AT ALL

ARM DRIFT

- BOTH ARMS MOVE EQUALLY OR NOT AT ALL
- ONE ARM DRIFTS COMPARED TO THE OTHER

SPEECH

- PATIENT USES CORRECT WORDS WITH NO SLURRING
- SLURRED OR INAPPROPRIATE WORDS OR MUTE

ATAXIA

- FINGER TO NOSE
- HEEL TO SHIN

	TAMU EMRC-EMS	TRAUMA SCORES	
	Standard Delegated Orders – Appendix	APP 13	Page 418
<u>TOC</u>			

PEDIATRIC TRAUMA SCORE (PTS): CATEGORY DEFINITIONS				
COMPONENT	+2	+1	-1	SCORE
Size	Child/adolescent, > 20 kg	Toddler, 11 – 20 kg	Infant, < 10 kg	
Airway	Normal	Assisted O2, mask, cannula	Intubated; ETT, Combitube, Cric	
Consciousness	Awake	Obtunded; lost consciousness	Coma; unresponsive	
Palpable pulse/Systolic blood pressure	Palpable radial or brachial pulse Good peripheral pulses, perfusion > 90 mmHg	Palpable femoral pulse Peripheral pulses, pulses palpable 51 – 90 mmHg	Weak or no pulses < 50 mmHg	
Fracture	None seen or none	Single closed Fx	Open, multiple Fx	
Cutaneous	No visible injury	Contusion, abrasion; laceration < 7cm; not through fascia	Tissue loss; and GSW/Stab; through fascia	
Total Score (PTS)				

Totals can range from a + 12 to a -6 with the range of <8 – 9 being the critical break point for transport to a comprehensive pediatric trauma care facility.

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Adult Revised Trauma Score

GCS:	14 – 15	5
	11 – 13	4
	8 – 10	3
	5 – 7	2
	3 – 4	1
Respiratory Rate:	10 – 24 / Min	4
	25 – 35 / Min	3
	36 / Min or greater	2
	1 – 9 / Min	1
	None	0
Respiratory Expansion	Normal	1
	Retractive / None	0
Systolic Blood Pressure:	90 mmHg or greater	4
	70 – 89 mmHg	3
	50 – 69 mmHg	2
	0 – 49 mmHg	1
	No Pulse	0
Capillary Refill:	Normal	2
	Delayed	1
	None	0
Total Trauma Score:		1 - 16

Trauma Score	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Percentage Survival	99	98	96	93	87	76	60	42	26	15	8	4	2	1	0	0

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*Zoll M Series
Quick Reference Guide*

<u>To Test Device</u>	<u>Recorder Button</u>
<u>Battery Charging System</u>	<u>Soft Keys</u>
<u>Sealed Lead Acid Battery</u>	<u>Summary Button</u>
<u>Universal Dial</u>	<u>Code Markers</u>
<u>Lead Button</u>	<u>NIBP Button</u>
<u>Size Button</u>	<u>12-Lead Monitoring</u>
<u>Alarm Suspend Button</u>	<u>EtCO₂</u>

To Test Device: (Unplug device from wall outlet if plugged in)

- Plug end of Universal Cable into the black test port that is attached to the cable
- Turn the central dial to the red (Defib) area
- Press the down arrow until the screen reads – 30 Joules Selected
- Press the Charge button
- Press Shock when lit
- “Test OK” should appear on screen.

Battery Charging System (4x4 Charger with AutoTest)

Battery Charging System should recondition a battery every time it is dropped in a bay, the discharge and reload cycling takes approximately 5 hours, so once you put a battery in the charger; don't expect to be able to use it for 5 hours. You will know a battery is ready when the Charger light is off and the Battery Ready light is illuminated. If the Fault light is lit, manually hit the test button and allow that battery to recycle again. If after two manual tests a battery fails, battery should be taken out of service.

Sealed Lead Acid Battery with “Smart” Chip

- Expect 1 – 1.5 hours of monitoring time when using all parameters on this unit. There are a lot of parameters using power off one battery, so battery management and rotation is absolutely required.
- A/C Power is also available for use, you may run of A/C power alone, or with a battery in the unit. The battery should be quick-charged.
- Smart Batteries need to be reconfigured after approximately 20 – 30 on/off cycles. You should know when the Smart Chip needs to be reconfigured because when you hit the top button on the battery, if the RED light comes on, that means the chip needs to be reconfigured. This is done by putting the battery in the 4x4 charger and manually hitting the TEST button.

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Universal Dial

One universal dial is used with all therapies (defibrillation/monitoring/pacing). Turn the dial to the therapy you wish to use. Additional options should appear at the bottom of the screen. Soft keys should be used often and the options at the bottom of the screen should change based on which therapy you are utilizing.

Lead Button

Your device has been set to “power up” in Lead II. You may press the Lead button to look at any lead on the screen, you should see what lead you are in on the top right hand of the screen.

Size Button

Your device is set to “power up” at 1.0 size. If you wish or need to adjust the size you would do so by pressing this button until the size you would like is displayed.

Alarm Suspend Button

When the monitor is turned on, all alarms should come up suspended. This allows you enough time to hook up your patient. Once you press the alarm suspend button, you should enable your alarms. If an alarm goes off, you should hear a loud beeping, check to see what alarm is blinking, press the Alarm Suspend button, your alarm should be suspended for 15 seconds to check your patient and make necessary adjustments. If things get crazy and you want to re-suspend all the alarms permanently, press the Alarm Suspend button for approx. 5 seconds until you see the X's going through all the alarms.

Recorder Button

Pressing the Recorder button should print whatever lead you are in and any readings from parameters in use. You should press the Recorder button again to stop printing. If you just want to record and store a “moment in time” or noticed change, simply press the Recorder button quickly twice and a 6 second strip should be stored in your Code Summary.

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Soft Keys

There are five soft keys located directly under the screen. As mentioned above, the options will change based on where the universal dial is turned. You should mainly be in the “Monitor” section when using soft keys. Here is your “Main Menu” of soft keys in the Monitor section:

Main Menu

- **Param:** This is to make adjustments per patient on all parameters on your device (NIBP, EtCO₂, and SpO₂). You should use this button a lot for NIBP and EtCO₂. This is where you can set the NIBP to run automatically at various time intervals.
- **Wave 2:** This allows you to scroll between what Lead you are monitoring, the EtCO₂ waveform, and the SpO₂ Pulse (PLETH) waveform.
- **ID #:** You may enter a Patient Name here. You also have the option to enter a Patient Name when in the 12-Lead section. This is here for patients you aren’t doing a 12-Lead on, but want to enter their name for the report. This feature is rarely used.
- **Alarms:** This shows you the default alarms for all parameters. This is where you may make changes to the alarm parameters or enable/disable certain alarms as necessary per patient. Defaults are restored upon turning the monitor off and back on.
- **12-Lead:** This is where you go to get into the 12-Lead Monitoring section.

Summary Button

There are three main uses in the Summary section:

1. **Print Chart option:** allows you to print the patient’s code summary. You may choose Print All or Print Range. If Print All is chosen, everything in the device will be printed. If the Print Range is chose, you will then be given the option to scroll through events and start printing from a particular event. This is useful when multiple patient records are stored in the device, but you don’t want to print everything in there. You would then scroll to the start of the patient you wish to print, then press print and everything from that point on will be printed.
2. **Print Log option:** allows you to print an overview of your entire call, every event with the time. If there are multiple patients stored in the device, you would receive a log of everything in there, all patients and all events.
3. **NIBP History option:** This should provide you with on-screen trending of your blood pressures and other vital signs. You may choose to print from this field; you would receive trending of all blood pressures, heart rate, SpO₂, and EtCO₂ trending.

Since you may not want to store multiple patients in your device, after you have printed everything you want, hold the Summary button in for 5 seconds until “Erasing Report” is displayed on the screen. You are getting rid of all history reports in the device (THIS DOES NOT ERASE THE MEMORY CARD).

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Code Markers

By pressing the Code Marker button, you should be given options of up to 20 interventions per section (Monitor/Defib/Pace). These may be entered specific to your protocol. Once you press the Code Marker button, you should see interventions come up on the bottom of the screen. Press the soft key that corresponds with that intervention. Use the “More” soft key to see additional interventions. Once you have marked an intervention, you have date/time stamped it and should get a 6 second strip associated with that Code Marker event in your code summary.

NIBP Button

By pressing the NIBP button, you may take a single blood pressure. If you press and HOLD the NIBP button for 3 seconds, it should automatically start a STAT mode. The cuff should auto inflate to 180, if a pressure is not obtained at 180, the cuff should re-inflate until a pressure is obtained.

In order to make changes per patient and start Stat and Auto intervals, adjust cuff inflation or change the Auto Interval time, see below:

- Start an Auto Interval: Your device has been set to default with a 5 minute Auto Interval. To start an Auto Interval, select the “Param” soft key from the main menu, NIBP should be highlighted, hit Enter. Now all soft keys correspond with NIBP.
- Stat: Takes as many blood pressures as it can in 5 minutes, up to 10 readings.
- Auto: Should take a blood pressure every 5 minutes (or whatever you change it to).
- Cuff Inflation: To adjust the cuff inflation, you would choose this soft key and increase/decrease the cuff inflation for the next pressure.
- Auto Interval: This is where you would go in and change your Auto Interval time (from 5 minutes to whatever you want). Once you make the change, hit Enter, then you should still have to hit Auto in order to start the Auto Mode.

To take a single pressure in between the Auto interval, you may do so by hitting the NIBP button. This should take a single pressure, but not change your Auto Interval. You may take a reading anytime after the first 30 seconds of the last pressure.

Troubleshooting NIBP: If you are having difficulty obtaining a pressure, make sure patient is stabilized, check cuff and hose are connected properly, stabilize the NIBP hose. This often alleviates any vibrations and helps speed up the reading.

12-Lead Monitoring

Press the 12-Lead Button to enter the 12-Lead Monitoring Section.

For an Interpretive 12-Lead:

Press PT Info, enter Age, press Enter, then enter Sex, press enter, hit Return, then Acquire. (if you don't press “Enter” while putting in the Age and Sex it should default back to a 60 year-old Male).

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Troubleshooting: If you run into artifact in a few leads or dark lines in some of your leads, try adjusting the filter on the 12-Lead to reduce this “noise.” This is done by hitting “Settings,” then “Filter.” Highlight 0.5 – 40 Hz, press Enter, then Acquire to get another 12-Lead at that setting. This should help alleviate most noise. We have your monitor defaulting to 0.5 – 150 Hz because this is the most diagnostic view.

EtCO₂

When not in use, leave unplugged! This should alleviate drainage on the battery and should keep the device from “talking” to you. Always keep a disposable Adult/Pedi airway adapter clipped into the EtCO₂ sensor. If you don’t have an adapter in and the cable is plugged in, it may try to read open air and “talk” to you. This is also bad for the cable, as it is very sensitive to foreign matter; the airway adapted helps protect the sensitive Infrared portion of the cable. When EtCO₂ monitoring is needed, plug in the cable and allow the sensor to warm up (this takes from 15 seconds to a minute to do) and “Warm Up” will be displayed near the top right hand corner of the screen. During Warm Up, an EtCO₂ waveform can still be obtained, however the respiratory rate and EtCO₂ amount may not be displayed.

Your monitors are set to default with O₂ compensation with EtCO₂ monitoring. O₂ and NO₂ compensation should be entered in order for your reading to not be compromised.

To Change/Add Compensation for O₂ or NO₂:

From the main menu, hit “Param” soft key, select “EtCO₂,” then “Comp.” Highlight the desired option (either O₂, Nitro, or Both). Again, you should compensate when using more than 60% of either one. Make sure to hit Enter so your request is accepted. You should see one asterisk* or two asterisks** depending upon whether you are compensating for one (O₂ or NO₂) or both (O₂ and NO₂).

To View your Waveform on screen:

From the Main Menu, hit the “Wave 2” button. You may also print your waveform by pressing Recorder. Press Recorder again to stop printing.

To Check your sensor and cable to make sure they are functioning properly, clip the sensor into the REF cell (you should see a Zero (0) and REF cell plug on the cable). When in the REF cell, you should see your EtCO₂ reading displayed as 38 mmHg (+/- 2) and the waveform (Wave 2 button) should show a straight line across the screen. This means your cable/sensor is operating properly.

Troubleshooting: If the device “talks” to you and says:

Zero CO₂ Adapter? / Check CO₂ Adapter alternate = Airway adapter was removed, occluded, or Adapter Zeroing needs to be performed or was performed incorrectly (for example, if CO₂ was present in the adapter during zeroing). Replace/Clean airway adapter, perform Adapter Zeroing.

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Use Room Air Adapter: Adapter zeroing started with CO₂ in adapter, or the adapter is on the “REF” or “0” Cell.

To perform a CO₂ Adapter Zeroing:

Hit “Param” key, then highlight “EtCO₂,” then hit “Zero”. Highlight “Start” (this is the default), then “Enter”. Watch on the screen—you should see when it tells you that the Adapter Zeroing process is taking place. These are commonly seen messages, all messages are listed in your Operator’s Guide.

Please read your Operator’s Guide for specific and more detailed information on your monitor. The more familiar you are with this device, the faster you should be able to make life-saving decisions.

	TAMU EMRC-EMS	CONTINUOUS POSITIVE AIRWAY PRESSURE VENTILATION (CPAP)	
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Pre-CPAP Patient Assessment

- Assess patient, record vital signs and pulse oximetry at room air
- Apply Capno-Mask to evaluate Capnography waveform
- Administer O₂ by non-rebreather mask while preparing equipment

Indications for Use

- Adult patient able to fit mask with proper seal
- Systolic BP > 90
- GCS > 10
- Significant respiratory distress that is not responsive to conventional therapy
- AND two or more of the following:
 - o SpO₂ < 92%
 - o Respiratory Rate > 25/minute
 - o Use of Accessory muscles or retractions

Contraindications for Use

- Inability to maintain open airway
- Respiratory Arrest/apnea
- Inadequate respiratory effort
- Suspected pneumothorax or chest trauma
- Excessive secretions
- Tracheostomy
- Patients at risk for aspiration (nausea/vomiting, foreign body airway obstruction, etc.)
- Facial trauma that would interfere with proper fit of mask

CPAP Procedure (CPAP)

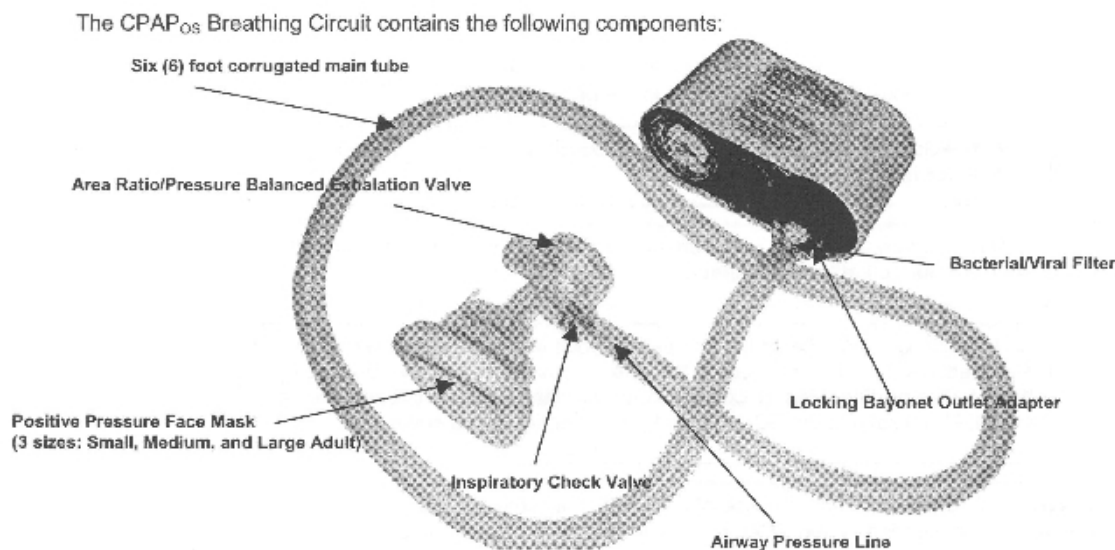
1. Place the patient in a seated position with legs dependant (if possible)
2. Monitor EKG and vital signs –B/P, heart rate, respiratory rate, SpO₂
3. Verify that the CPAP Adjustment knob is turned all the way to the left (off)
4. Attach CPAP unit to an Oxygen source
 - a. Ensure the tank valve is fully open
 - b. Verify that the liter flow to Oxygen barb is set to zero
5. Connect Locking Bayonet Outlet Adapter to CPAP unit
 - a. Both bayonet tabs should disappear once adapter is turned clockwise
6. Size Mask for patient (Medium will accommodate most patients)
7. Attach Mask to Exhalation Valve
8. Attach head strap to one side of the Face Mask
9. Inform patient of procedure
10. Open Adjustment Knob slowly to begin a slight flow of oxygen
11. Gently apply Face Mask to patient
 - a. **Instruct the patient to breath in through their nose slowly and exhale through their mouth as long as possible (count slowly and aloud to four (4) then instruct to inhale slowly)**

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12. Completely attach the head strap to the other side of the CPAP Mask
 - a. Ensure a tight seal and adjust as necessary
 - b. Explain to the patient that you will begin to slowly increase the pressure and to continue exhaling out against the pressure as long as possible before inhaling
13. Increase CPAP by turning the Adjustment Knob to the right
14. Increase CPAP to achieve an initial CPAP of 3 cm H₂O
15. Once the patient is compliant with the procedure, slowly increase the CPAP to 10 cmH₂O if needed. Titrate to effect.

Critical Points and Special Notes

- Success is highly dependent upon patient tolerance and EMS personnel ability to coach
 - o Instruct patient to breathe in through nose and exhale through mouth as long as possible
- Deterioration on CPAP → mechanical ventilation/intubation
- Significant respiratory distress that is not responsive to conventional therapy
 - o Deterioration of mental status
 - o Increase of the EtCO₂
 - o Decline of the SpO₂
 - o Progressive fatigue
- Monitor closely for development of pneumothorax and or hypotension
- Patients should be closely monitored with SpO₂, EKG, BP, ETCO₂
- Monitor patients closely for vomiting and or gastric distention
- Inline nebulization may be utilized with CPAP in place



	TAMU EMRC-EMS	IMPEDANCE THRESHOLD DEVICE (ResQPOD®)	
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Impedance Threshold Device (ResQPOD®)

General:

An Impedance Threshold Device (ResQPOD®) selectively impedes inspiratory gases from entering the lungs during the decompression phase (upstroke) of CPR. This generates a greater negative pressure in the thorax, allowing for an enhanced venous return to the heart. As a result of greater venous return, increased preload is accomplished, which generates a greater stroke volume during the subsequent compression phase (downstroke) of CPR, which leads to increased blood flow.

Indication:

- Any patient (>10 kg) in cardiac arrest

Contraindications:

- Traumatic Cardiac Arrest
- Patients < 10 kg
- Flail Chest
- Uncontrolled hemorrhage
- Patients with a pulse

Procedure:

1. Begin CPR ensuring proper rate and depth, and allowing for complete chest recoil during the decompression phase of chest compressions
2. Select the airway adjunct (mask, endotracheal tube, Combitube, etc.)
3. Attach Impedance Threshold Device (ResQPOD®) to the airway adjunct used above
4. Attach the EtCO₂ detector between the ITD and the ventilation source (BVM or ventilator)
5. If ventilating with a mask (pt is not intubated):
 - Do not use the timing assist light
 - CPR continues at 30 compressions : 2 ventilations
 - Pause compressions to deliver the ventilations
6. If patient is intubated endotracheally or with a Combitube:
 - Deliver a single one-second ventilation with each flash of the timing assist light
 - Do not pause compressions to deliver ventilations. Ventilations may be asynchronous to compressions.
7. Use of this device must be discontinued once ROSC has been achieved, or when CPR is no longer necessary.

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Indications:

- Patients in both Respiratory and Cardiac Arrest
- Patients with Profound Hypoxia evidenced by any of the following:
 1. Respiratory Arrest
 2. Obvious Cyanosis
 3. Altered Mental Status
 4. Poor air exchange upon auscultation
 5. Oxygen Saturation (SpO2) below 90%

Contraindications:

Patients under 44 lbs. or 20 kg. lean body weight

Procedure:

If patient is in respiratory arrest but has a pulse:

1. Attach to and turn on oxygen supply source.
2. Turn on Autovent (Adjust BPM knob).
3. Ensure proper function by briefly occluding patient valve to ensure audible pressure alarm function with relief at standard settings.
4. Attach appropriate sized ventilation mask to Autovent Patient Valve.
5. Set Tidal Volume to initial setting that most nearly equals 6ml/lb. of patient lean body weight (10-15 ml/kg). Adjust as needed within appropriate range to achieve positive visible chest rise with positive breath sounds upon auscultation.
6. Set Breaths Per Minute (Ventilatory Rate) at 8-40 BPM. Initial Rate setting can be adjusted within the appropriate color-coded range as needed to change minute volumes.
7. Apply facemask to patient with two hands and use either head tilt and/or jaw thrust to maintain patent airway. Maintain mask seal and monitor inspiratory pressure. If audible alarm is heard, check for airway obstruction or occlusion and adjust tidal volume as necessary.
8. Observe for chest rise and have second rescuer listen to both lungs for air exchange.

If patient is in respiratory and/or cardiac arrest:

1. Attach to and turn on oxygen supply source.
2. Turn on Autovent (Adjust BPM knob).
3. Ensure proper function by briefly occluding patient valve to ensure audible pressure alarm function with relief at standard settings.
4. Attach appropriate sized ventilation mask to Autovent Patient Valve.
5. For Adult use, set Tidal Volume control to volume that most nearly equals 6ml per pound of lean body weight (10-15 ml/kg) or 800 ml.
6. Set Ventilator Rate at 8 breaths per minute. Insure that Tidal Volume and Rate selected are color coded in the WHITE band.
7. For pediatric use, set Tidal Volume control to volume that is 5-6 ml/lb lean body weight.
8. Set Rate control at setting whose color code is ORANGE (12-20/minute).
9. Apply facemask to patient with two hands and use either head tilt and/or jaw thrust to maintain patent airway. Maintain mask seal and monitor inspiratory pressure. If audible alarm is heard, check for airway obstruction or occlusion and adjust tidal volume as necessary.

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10. Observe for chest rise and have second rescuer listen to both lungs for air exchange.
11. Second rescuer finds landmark and performs chest compressions continuously at appropriate rate.
12. In the event of any suspected failure or problem such as failure of the chest to rise or Audible Alarm Alert:

Alarm Alert/Trouble Shooting

- Immediately second rescuer listens to both lungs for air exchange.
- If no air exchange, reposition head and mask.
- If no air exchange, consider Obstructed Airway Procedures.
- Check Patient Valve for foreign material or blockage.
- Check patient hose connection to Control Box.
- Check all Control Settings (Inspiratory Time, Volume, Rate).
- If unable to resolve the suspected problem promptly, (approx. 30 seconds or less):
 - i. Remove patient hose from Autovent case,
 - ii. Insert Universal 22mm OD mouthpiece into hose,
 - iii. Blow into mouthpiece with a slow, full breath.
- By auscultation, listen for air exchange while watching for positive visible chest rise.
- Consider Obstructed Airway Procedure or alternative method of ventilation.

	TAMU EMRC-EMS	INDUCED HYPOTHERMIA	
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Indications:

- Any non-traumatic and non-hemorrhagic arrest or post arrest patient over the age of 16 years who who is NOT in an awake and alert status with purposeful neurologic function.
- Post arrest patient with GCS <9
- Initial temperature > 34°C (93.2°F)
- Patent airway secured with endotracheal tube (preferred) or Combitube

Contraindications:

- Traumatic arrest
- Cardiac arrest resulting from or associated with hemorrhage
- Pregnant female with obviously gravid uterus
- Patient whose airway has not been managed with either an endotracheal tube or Combitube

General Standards:

- Patients will be cooled to a target range of 33° - 34°C (91.4°F – 93.2°F)
- Patients will develop metabolic alkalosis with cooling. Do not hyperventilate
- Patent airway secured with endotracheal tube (preferred) or Combitube
 - o Otherwise, do not induce hypothermia

Equipment:

- 1-liter bags of NaCl IV solution at a temperature of 4°C (39°F)
- IV Tubing
- Pressure infusion device
- Ice packs (optional)
- Versed
- Vecuronium

Procedure:

Upon ROSC:

1. Obtain temperature prior to inducing hypothermia
2. Perform and document Neurological Assessment
3. Perform 12-Lead
4. If Temperature > 34°C (93.2°F) and above criteria are met:
 - Establish IV/IO infusion using cooled saline
 - Infuse 40 ml/kg of cooled saline via pressure infuser while enroute to an approved facility. Do not delay transport for the purpose of cooling.
5. Monitor patient and continue treatment with appropriate SDO
6. Control shivering with:
 - Versed 0.1 mg/kg IV/IO
 - Vecuronium 0.1 mg/kg IV/IO (max 10 mg)

	TAMU EMRC-EMS	ZOLL DIGITAL 12 LEAD TRANSMISSION	
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Indications:

- To facilitate delivery of a 12 lead to a receiving hospital or agency

Contraindications:

- None

Procedure:

1. Acquire 12 lead according to PROC 01
2. Connect Zoll Serial Cable to monitor and computer
3. Verify computer's wifi or hard wired connectivity
4. Start Zoll Data Real Time and Click "Real Time"
5. Select "Current Destination" and select receiving agency
6. On monitor, select "Interlink" and "Dial Phone#"
7. Wait for computer to receive upload
8. Select 12 Lead(s) and select "Send Now"
9. Confirm transmission after a couple of minutes

Precautions and Comments:

- Internet connectivity is necessary
- There is no delivery confirmation. Remember to call the receiving agency for transmission confirmation
- Preferred method is to transmit from a wired connection

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