

2021 Adult and Pediatric Scott County EMS Treatment Protocols

IOWA DEPARTMENT OF PUBLIC HEALTH
BUREAU OF EMERGENCY AND TRAUMA SERVICES
JANUARY 2021



Scott County EMS Protocols – Adult and Pediatric

TABLE OF CONTENTS	
INTRODUCTION	2
SERVICE PROGRAM AUTHORIZATION	3
MEDICAL DIRECTOR AUTHORIZATION	5
PROTOCOL REVISIONS	6
INITIAL PATIENT CARE PROTOCOL	8
ABDOMINAL PAIN (NON TRAUMATIC)	12
ALLERGIC REACTION	13
ALTERED MENTAL STATUS	14
AMPUTATED PART	15
ASTHMA AND COPD	16
BEHAVIORAL EMERGENCIES	17
BURNS	18
CARDIAC ARRHYTHMIAS	21
CHEST PAIN	23
CHILD BIRTH	26
CONGESTIVE HEART FAILURE	27
DETERMINATION OF DEATH	28
DROWNING	29
ENVIRONMENTAL EMERGENCIES	30
FROST BITE	31
HAZARDOUS MATERIALS	32
NAUSEA AND VOMITING	36
OVERDOSE	37
PAIN CONTROL	38
POISONING	39
POST RESUSCITATION WITH SPONTANEOUS CIRCULATION	40
PREGNANCY EMERGENCIES	41
SEIZURES	42
SEPSIS	43
SEVERE RESPIRATORY INFECTION	45
SHOCK	46
SPINAL CARE	50
STROKE	51
TERMINATION OF RESUSCITATION	52
TRAUMA	53
TRIAGE MCI	56

Introduction

Iowa Administrative Code 641 - Chapter 132: Emergency Medical Services—Service Program Authorization

132.8(3) Service program operational requirements. Ambulance and non-transport service programs shall:

b. Utilize department protocols as the standard of care. The service program medical director may make changes to the department protocols provided the changes are within the EMS provider's scope of practice and within acceptable medical practice. A copy of the changes shall be filed with the department.

132.9(2) The medical director's duties include, but need not be limited to:

a. Developing, approving and updating protocols to be used by service program personnel that meet or exceed the minimum standard protocols developed by the department.

Purpose

The completed protocol approval page allows for a physician medical director to implement the use of the *2018 Iowa Statewide EMS Treatment Protocols* for one or more service programs where they serve as the program's medical director.

Instructions

Print or type the service name in the space provided. Next select each service's corresponding service type and level of authorization. If the medical director makes any additions, subtractions, or other changes to the 2018 protocols the changes will need to be noted in the Protocol Revisions space and filed with the Department. This would include the addition, subtraction, or change of any medication listed within the 2018 protocols. If no changes are made to the 2018 protocols check the box for no changes. The service program will post the completed protocol approval document in the AMANDA folder.

Scope of Practice

The *Iowa Emergency Medical Care Provider Scope of Practice* document outlines the skills each level of certified EMS provider can perform. Some skills will require the approval of the service program's physician medical director as well as documentation of additional training. Iowa EMS providers may not perform skills outside of their identified scope of practice as documented in the *Iowa Emergency Medical Care Provider Scope of Practice*. The most current version of the Iowa Emergency Medical Care Provider Scope of Practice document can be viewed and downloaded from the Bureau's website at: <http://idph.iowa.gov/bets/ems/scope-of-practice>.

Recommendations

It is recommended that each service program maintain records that document the review/education of all staff members on the program's most current protocols and the most current version of the *Iowa Emergency Medical Care Provider Scope of Practice* document.

Protocol checklist

Service(s) Name		Bennett Ambulance	Bettendorf Fire Department	Blue Gras Fire Department	Buffalo Fire Department	Davenport Fire Department
Service Type	Ambulance	X				
	Nontransport		X	X	X	X
Service's Level of Authorization	EMR					
	EMT			X	X	
	EMT-I					
	AEMT					
	EMT-P					
	Paramedic	X	X			X

Service(s) Name		Dixon Fire Department	Donahue Fire Department	Durant Ambulance	Eldridge Fire Department	LeClaire Fire Department
Service Type	Ambulance			X		
	Nontransport	X	X		X	X
Service's Level of Authorization	EMR					
	EMT	X	X		X	X
	EMT-I					
	AEMT					
	EMT-P					
	Paramedic			X		

Scott County EMS Protocols – Adult and Pediatric

Service(s) Name		Long Grove Fire Department	Maysville Fire Department	McCausland Fire Department	MEDIC EMS	New Liberty Fire Department
Service Type	Ambulance				X	
	Nontransport	X	X	X		X
Service's Level of Authorization	EMR					
	EMT	X	X	X		X
	EMT-I					
	AEMT					
	EMT-P					
	Paramedic				X	
Service(s) Name		Princeton Fire Department	Riverdale Fire Department	Walcott Fire Department	Wheatland Ambulance	
Service Type	Ambulance				X	
	Nontransport	X	X	X		
Service's Level of Authorization	EMR					
	EMT	X		X	X	
	EMT-I					
	AEMT					
	EMT-P					
	Paramedic		X			

Approval of these additional skills must be within the Service Program's Level of Authorization and the Iowa EMS Provider's Scope of Practice	Mark "Yes" if the skill is approved by the medical director to be performed by the identified certification level	Certification Level	Yes	No
	Pulse oximetry	EMR	X	
	Glucose monitor	EMT, EMT-I	X	
All Scott County Medical Directors agree to this list as signed below	Service carries auto-inject epi	EMT, EMT-I		X
	Central line access	EMT-I, AEMT		X
	CPAP	EMT, AEMT	X	

NOTE: Iowa's Scope of Practice document requires medical director approval and documentation of additional training for these skills. Service program must maintain documentation of the additional training

Scott County Protocols 2021

Medical Director Statement of Approval

As the physician medical director I have reviewed both the *2021 Scott County EMS Treatment Protocols* and the *Iowa Emergency Medical Care Provider Scope of Practice* document and approve the use of the skills, medications, and protocols with revisions as documented above for the authorized Iowa EMS program(s) listed within this document.

Medical Director's Printed Name	Signature	Date
Dr. Calvin Atwell		03/31/2021
Dr. Michael Barr		03/31/2021
Dr. Keri Mounce		03/31/2021
Dr. Wayne Gallops		03/31/2021
Dr. Mark Iltis		03/31/2021
Dr. Richard Vermeer		03/31/2021

IOWA EMS TREATMENT PROTOCOLS

Adult Treatment Protocols

List all changes made by the physician medical director. According to Iowa Administrative Code 641-132.8(3)(b) service programs shall, *“utilize department protocols as the standard of care. The service program medical director may make changes to the department protocols provided the changes are within the EMS provider’s scope of practice and within acceptable medical practice. A copy of the changes shall be filed with the department.”* Include a copy of any additional protocols if approved for use. Submit a revised copy of the drug list on next page if additions or deletions apply.

Protocol	Changes Made
Airway	Changed oxygen saturation levels
Allergic Reaction (Added, removed from shock)	Epinephrine drip added
Altered Mental Status	Nasal Narcan added and dosage changed Thiamine removed
Amputated Part	Deleted, info in TRAUMA protocol
Asthma	Added Duoneb, evaluate the need for CPAP or advanced airway
Behavioral Emergencies	Added IM as a route for Midazolam added Ziprasidone (Geodon)
Burns	Added consider need for Haz Mat response and referred to Haz Mat protocol, deleted LR, ensure source of electrical current has been removed, treat for shock as needed.
Cardiac Arrhythmia	Naloxone added for cardiac arrest
Congestive Heart Failure	Changed oxygen saturations
Hazardous Material	Added Protocol
Near Drowning Adult	Added protocol
Overdose	Added Protocol
Pain Control	Removed administration of anxiolytic medication for severe pain added intranasal Fentanyl. Naloxone dose increased;
Pregnancy Emergencies	Protocol added
Sepsis (Adult)	Protocol Added

Protocol	Changes Made
Severe Respiratory Infection	Protocol added
Shock (Adult)	Protocol added
Stroke	Added: Activate a field "STROKE ALERT" for patients with the onset of the above symptoms and last seen as normal within 4.5 hours while awake. Transport these patients emergently to the ED
Trauma	Reference to shock protocol, added amputated part protocol. Tranexamic Acid added for bleeding
Triage / MCI	Protocol Added
Pediatric Abdominal Pain (non-traumatic)	Protocol Added
Peds Allergic Reaction	Added Epi drip to the protocol
Pediatric Altered Mental Status	Evaluate need for intubation
Pediatric Behavioral	Protocol Added
Pediatric Hypothermia	Protocol Added
Pediatric Pain Control	Added: Consider administration of ZOFRAN (ONDANSATRON) 0.1mg/kg IV up to 4mg slow IV push after Morphine or Fentanyl to reduce nausea from medication. Give NARCAN 0.1mg/ kg IV, IM or Intranasal up to 1mg for respiratory depression from narcotics. May repeat x 1 if needed
Pediatric Seizures	Specific medications listed out.
Pediatric Sepsis	Protocol Added

Initial Patient Care Protocol-Adult and Pediatrics

This protocol serves to reduce the need for extensive reiteration of basic assessment and other considerations in every protocol.

Assessment

1. Assess scene safety
 - a. Evaluate for hazards to EMS personnel, patient, bystanders
 - b. Determine number of patients
 - c. Determine mechanism of injury
 - d. Request additional resources if needed and weigh the benefits of waiting for additional resources against rapid transport to definitive care
Consider declaration of mass casualty incident if needed
2. Use appropriate personal protective equipment (PPE)
3. Consider cervical spine stabilization and/or spinal care if trauma

Primary Survey

1. **Airway, Breathing, Circulation** is cited below; (although there are specific circumstances where **Circulation, Airway, Breathing** may be indicated such as cardiac arrest or major arterial bleeding)
 - a. Airway (assess for patency and open the airway as indicated)
 - i. Patient is unable to maintain airway patency—open airway
 1. Head tilt chin lift
 2. Jaw thrust
 3. Suction
 4. Consider use of the appropriate airway management adjuncts and devices:
 5. For patients with laryngectomies or tracheostomies, remove all objects or clothing that may obstruct the opening of these devices, maintain the flow of prescribed oxygen, and reposition the head and/or neck
 - b. Breathing
 - i. Evaluate rate, breath sounds, accessory muscle use, retractions, patient positioning
 - ii. Administer oxygen as appropriate with a target of achieving 94-96% saturation for most acutely ill patients
 - iii. Apnea (not breathing) – open airway
 - c. Circulation
 - i. Control any major external bleeding (see Extremity Trauma/External Hemorrhage Management guideline)
 - ii. Assess pulse
 1. If none – go to Cardiac Arrhythmia Protocol
 2. Assess rate and quality of carotid and radial pulses
 - iii. Evaluate perfusion by assessing skin color and temperature
 1. Evaluate capillary refill
 - d. Disability
 - i. Evaluate patient responsiveness: AVPU scale (Alert, Verbal, Pain, Unresponsive)
 - ii. Evaluate gross motor and sensory function in all extremities
 - iii. Check blood glucose in patients with altered mental status
 - iv. If acute stroke suspected – go to Stroke Protocol

- e. Expose patient as appropriate to complaint
 - i. Be considerate of patient modesty
 - ii. Keep patient warm

Secondary Survey

1. The performance of the secondary survey should not delay transport in critical patients. Secondary surveys should be tailored to patient presentation and chief complaint. Secondary survey may not be completed if patient has critical primary survey problems
 - a. Head
 - i. Pupils
 - ii. Naso-oropharynx
 - iii. Skull and scalp
 - b. Neck
 - i. Jugular venous distension
 - ii. Tracheal position
 - iii. Spinal tenderness
 - c. Chest
 - i. Retractions
 - ii. Breath sounds
 - iii. Chest wall deformity
 - d. Abdomen/Back
 - i. Flank/abdominal tenderness or bruising
 - ii. Abdominal distension
 - e. Extremities
 - i. Edema
 - ii. Pulses
 - iii. Deformity
 - e. Neurologic
 - i. Mental status/orientation
 - ii. Motor/sensory
2. Obtain Baseline Vital Signs (An initial full set of vital signs is required: pulse, blood pressure, respiratory rate, neurologic status assessment) (see chart below)
 - a. Neurologic status assessment: establish a baseline and note any change in patient neurologic status
 - i. AVPU (Alert, Verbal, Painful, Unresponsive) or
 - ii. Glasgow Coma Score (GCS)
 - b. Patients with cardiac or respiratory complaints
 - i. Pulse oximetry
 - ii. 12-lead EKG should be obtained early in patients with cardiac or suspected cardiac complaints
 - iii. Continuous cardiac monitoring, if available
 - iv. Consider waveform capnography (essential for patients who require invasive airway management) or digital capnometry

- c. Patient with altered mental status
 - i. Check blood glucose
 - ii. Consider waveform capnography (essential for patients who require invasive airway management) or digital capnometry
 - d. Stable patients should have at least two sets of pertinent vital signs. Ideally, one set should be taken shortly before arrival at receiving facility
 - e. Critical patients should have pertinent vital signs frequently monitored
3. Obtain OPQRST history:
 4. Obtain SAMPLE history:

Treatment and Interventions

1. Administer oxygen as appropriate with a target of achieving 94-98% saturation
2. Tier with an appropriate service if advanced level of care or assistance is needed and can be accomplished in a timely manner
3. Place appropriate monitoring equipment as dictated by assessment, within scope of practice – these may include:
 - a. Continuous pulse oximetry
 - b. Cardiac rhythm monitoring
 - c. Waveform capnography or digital capnometry
 - d. Carbon monoxide assessment
4. If within scope of practice, establish vascular access if indicated or in patients who are at risk for clinical deterioration.
5. Monitor pain scale
6. Reassess patient

Key Considerations

Pediatrics: Use an accurate weight or length-based assessment tool (length-based tape or other system) to estimate patient weight and guide medication therapy and adjunct choices.

- a. The pediatric population is generally defined by the onset of puberty
- b. Consider using the pediatric assessment triangle (appearance, work of breathing, circulation) when first approaching a child to help with assessment.

Geriatrics: The geriatric population is generally defined as those patients who are 65 years old or more.

- a. In these patients, as well as all adult patients, reduced medication dosages may apply to patients with renal disease (i.e. on dialysis or a diagnosis of chronic renal insufficiency) or hepatic disease (i.e. severe cirrhosis or end-stage liver disease)

Co-morbidities: reduced medication dosages may apply to patients with renal disease (i.e. on dialysis or a diagnosis of chronic renal insufficiency) or hepatic disease (i.e. severe cirrhosis or end-stage liver disease).

Normal Vital Signs

Age	Pulse	Respiratory Rate	Systolic BP
Preterm less than 1 kg	120-160	30-60	36-58
Preterm 1 kg	120-160	30-60	42-66
Preterm 2 kg	120-160	30-60	50-72
Newborn	120-160	30-60	60-70
Up to 1 year	100-140	30-60	70-80
1-3 years	100-140	20-40	76-90
4-6 years	80-120	20-30	80-100
7-9 years	80-120	16-24	84-110
10-12 years	60-100	16-20	90-120
13-14 years	60-90	16-20	90-120
15 years or older	60-90	14-20	90-130

Glasgow Coma Scale

ADULT GLASGOW COMA SCALE		PEDIATRIC GLASGOW COMA SCALE	
Eye Opening (4)		Eye Opening (4)	
Spontaneous	4	Spontaneous	4
To Speech	3	To Speech	3
To Pain	2	To Pain	2
None	1	None	1
Best Motor Response (6)		Best Motor Response (6)	
Obeys Commands	6	Spontaneous Movement	6
Localizes Pain	5	Withdraws to Touch	5
Withdraws from Pain	4	Withdraws from Pain	4
Abnormal Flexion	3	Abnormal Flexion	3
Abnormal Extension	2	Abnormal Extension	2
None	1	None	1
Verbal Response (5)		Verbal Response (5)	
Oriented	5	Coos, Babbles	5
Confused	4	Irritable Cry	4
Inappropriate	3	Cries to Pain	3
Incomprehensible	2	Moans to Pain	2
None	1	None	1
Total		Total	

ABDOMINAL PAIN (NON-TRAUMATIC)

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Give nothing by mouth
- b) Transport in position of comfort

ADVANCED CARE GUIDELINES

- c) Establish IV access if patient condition warrants
- d) Apply appropriate patches and monitor EKG.
- e) Consider a fluid bolus if indicated.
- f) Consider pain and nausea control

FENTANYL 25 to 50mcg IV or Intranasal (via MAD Device) every 5 minutes as needed to a maximum of 100 mcg

ONDANSETRON (ZOFRAN) 4mg IV after Fentanyl to reduce nausea from medication.

ALLERGIC REACTION (ANAPHYLAXIS)

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) With serious systemic signs and symptoms. Administer preloaded auto-injectable **EPINEPHRINE** (0.3 mg) and transport.
- b) Tier with a Paramedic level service when available.
- c) Continuously reassess airway, breathing and circulation status.
- d) If patient condition continues to worsen, give additional preloaded auto-injectable **EPINEPHRINE** (0.3 mg) every 5-10 minutes as needed up to 3 doses.
- e) Treat for shock and be prepared to initiate CPR and AED as necessary during transport. Continue transport without delay.

When using auto-injector remove safety cap and place tip of auto-injector against the patient's lateral thigh midway between the waist and the knee. Push the injector firmly against the thigh and hold firmly until the injector activates and medication is injected (10) count). If unable to use this site an alternative site is the shoulder at the fleshy portion of the upper arm.

ADVANCED CARE GUIDELINES

- f) Administer **EPINEPHRINE** 1:1,000 0.3cc IM, may repeat in 5-10 minutes if symptoms warrant.
- g) Establish IV access at a TKO rate for normal blood pressure, or as appropriate if hypotensive.
- h) Administer **DIPHENHYDRAMINE (BENADRYL)** 50 mg IV or IM
- i) Consider administration of **IPRATROPIUM BROMIDE 0.5mg/ALBUTEROL 2.5mg (DUONEB)** in 3mL NS by nebulizer **X 1** for respiratory distress if > age 5 and no history of glaucoma **OR ALBUTEROL** 2.5mg by nebulizer if respiratory distress
- j) Consider early intubation if severe anaphylaxis exists.
- k) For cases of anaphylaxis (systolic BP less than 90 systolic, respiratory distress, altered LOC) consider administration of IV epinephrine as follows:
 - Add 1 mg **EPINEPHRINE** to 1 liter **NORMAL SALINE** (either 10 ml 1:10,000 or 1 ml 1:1000) Affix a label stating "**1 mg epinephrine added**"
 - Attach micro drip tubing to the bag with **EPINEPHRINE**
 - Administer IV piggyback at a rate of 60 micro drops per minute into a fast running IV of Normal Saline

ALTERED MENTAL STATUS / SYNCOPE / DIZZINESS

2. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Obtain blood glucose
- b) If conscious & able to swallow, administer **GLUCOSE** 15 gm between cheek and gum
- c) Evaluate the need for **NALOXONE (Narcan)** 2-4 mg Intranasal. If no response may repeat in 3 minutes

ADVANCED CARE GUIDELINES

- a) Establish IV access.
- b) Monitor EKG and treat dysrhythmias following the appropriate protocol(s).
- c) Obtain a 12 lead EKG
- d) If hypoglycemic (less than 60 mg/dL.)
Administer **DEXTROSE** (12.5 - 25gm of 50% solution) slow IV/IO push.
- e) If unable to obtain IV access give **GLUCAGON** 1 mg IM.
- f) Evaluate the need for **NALOXONE** 2-4 mg IV (or intranasal if IV access is unavailable). If no response may repeat in 3 minutes
- g) Evaluate the need for intubation

AMPUTATED PART

1. Follow initial patient care protocol
2. Follow Trauma protocol if indicated

BASIC CARE GUIDELINES

- a) Locate amputated part if possible
- b) Wrap amputated part in saline moistened gauze
- c) Place wrapped amputated part in empty plastic bag or wrap in plastic wrap
- d) Place the plastic bag with the amputated part in a water and ice mixture or placed on an chemical ice pack with insulation such as a towel
- e) Do not use ice alone or dry ice
- f) Label with patient name, the date, and time
- g) Make sure the part is transported with the patient, if possible

ADVANCED CARE GUIDELINES

- a) Refer to Pain Control protocol
- b) Refer to Trauma or Shock Protocol if necessary

ASTHMA AND COPD / RESPIRATORY DISORDER

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) If patient has a physician prescribed hand-held metered dose inhaler:
 - Assist patient in administering a single dose if they have not done so already
 - Reassess patient and assist with second dose if necessary per medical direction
- b) Evaluate the need for CPAP, if available

ADVANCED CARE GUIDELINES

- c) Administer bronchodilator via nebulizer, repeat as needed
- d) If Bronchodilator is not appropriate administer **TERBUTALINE** .25 mg Subcutaneous for patients greater than 12 years of age. May be repeated twice fifteen minutes apart.
- e) Establish IV access.
- f) Monitor EKG and treat dysrhythmias following the appropriate protocol(s).
- g) Administer **EPINEPHRINE** 1:1,000 0.3cc IM, may repeat in 5-10 minutes if symptoms warrants
- h) Evaluate the need for airway management.

BEHAVIORAL EMERGENCIES

1. Follow initial patient care protocol
2. If there is evidence of immediate danger, protect yourself and others by summoning law enforcement to help ensure safety

BASIC CARE GUIDELINES

- a) Consider medical or traumatic causes of behavior problems
- b) Keep environment calm

ADVANCED CARE GUIDELINES

- a) For severe anxiety or threat of safety to patient or crew, administer
- b) **MIDAZOLAM** 5mg intranasal, IV, IO, or IM, repeat as needed.
- c) Consider administering **ZIPRASIDONE (Geodon)** 10 mg IM Injection to be repeated X1 in 10 minutes if needed to a maximum dose of 20 mg IM total.
- d) Or **KETAMINE**
 - 200 mg IM Injection up to 69kg
 - 300 mg IM Injection 70-89kg
 - 400 mg 90kg or greater
 - May repeat once in 3-5 minutes if needed

After Ketamine administration:

- Administer **OXYGEN** to maintain an SPO2 of > 94%
- Monitor ETCO2
- Prepare for airway maintenance as needed
 - i. Excited delirium patients will be flushed, diaphoretic and hot to the touch and require medication if the patient is a risk to themselves or others.
 - ii. With suspicion of recent use of stimulant substances associated with hallucinations
- e) Apply soft restraints if needed for patient or responder safety. If possible obtain medical control order for restraints.
- f) When safe, Establish IV access and apply a cardiac monitor.

BURNS

1. Follow initial patient care protocol
2. Continually monitor the airway for evidence of obstruction
3. Do not use any type of ointment, lotion, or antiseptic
4. Maintain normal patient temperature
5. Transport according to the Out-of-Hospital Trauma Destination Decision Protocol (Appendix)

Thermal Burns

BASIC CARE GUIDELINES

- a) Stop the burning process
- b) Estimate percent of body surface area injured and depth of injury
- c) If wound is less than 10% Body Surface Area, cool burn with Normal Saline
- d) Remove smoldering clothing and jewelry and expose area
- e) Cover the burned area with plastic wrap or a dry clean dressing
- f) Do not break blisters
- g) Maintain normal body temperature

ADVANCED CARE GUIDELINES

- a) Establish an IV of NS. For severe burns, consider administration of 20ml / kg up to 500 ml bolus
- b) Contact medical control for further fluid administration
- c) Refer to Pain Control protocol

BURNS CONTINUED

Chemical Burns

BASIC CARE GUIDELINES

- a) Brush off powders prior to flushing. Lint roller may also be used to remove powders prior to flushing
- b) Attempt to identify contaminant and consider need for Haz Mat response and refer to Haz Mat Protocol
- c) Immediately begin to flush with large amounts of water
- d) Continue flushing the contaminated area when en-route to the receiving facility
- e) Do not contaminate uninjured areas while flushing

ADVANCED CARE GUIDELINES

- f) Refer to Pain Control protocol

Toxin in Eye

BASIC CARE GUIDELINES

- a) Flood eye(s) with lukewarm water or **NORMAL SALINE** and have patient blink frequently during irrigation. Use caution to not contaminate other body areas
- b) Attempt to identify contaminant and consider need for Haz Mat response and refer to Haz Mat Protocol
- c) Continue to flush during transport

ADVANCED CARE GUIDELINES

- d) Establish a large bore IV if indicated and infuse as patient condition warrants
- e) Refer to Pain Control protocol

BURNS CONTINUED

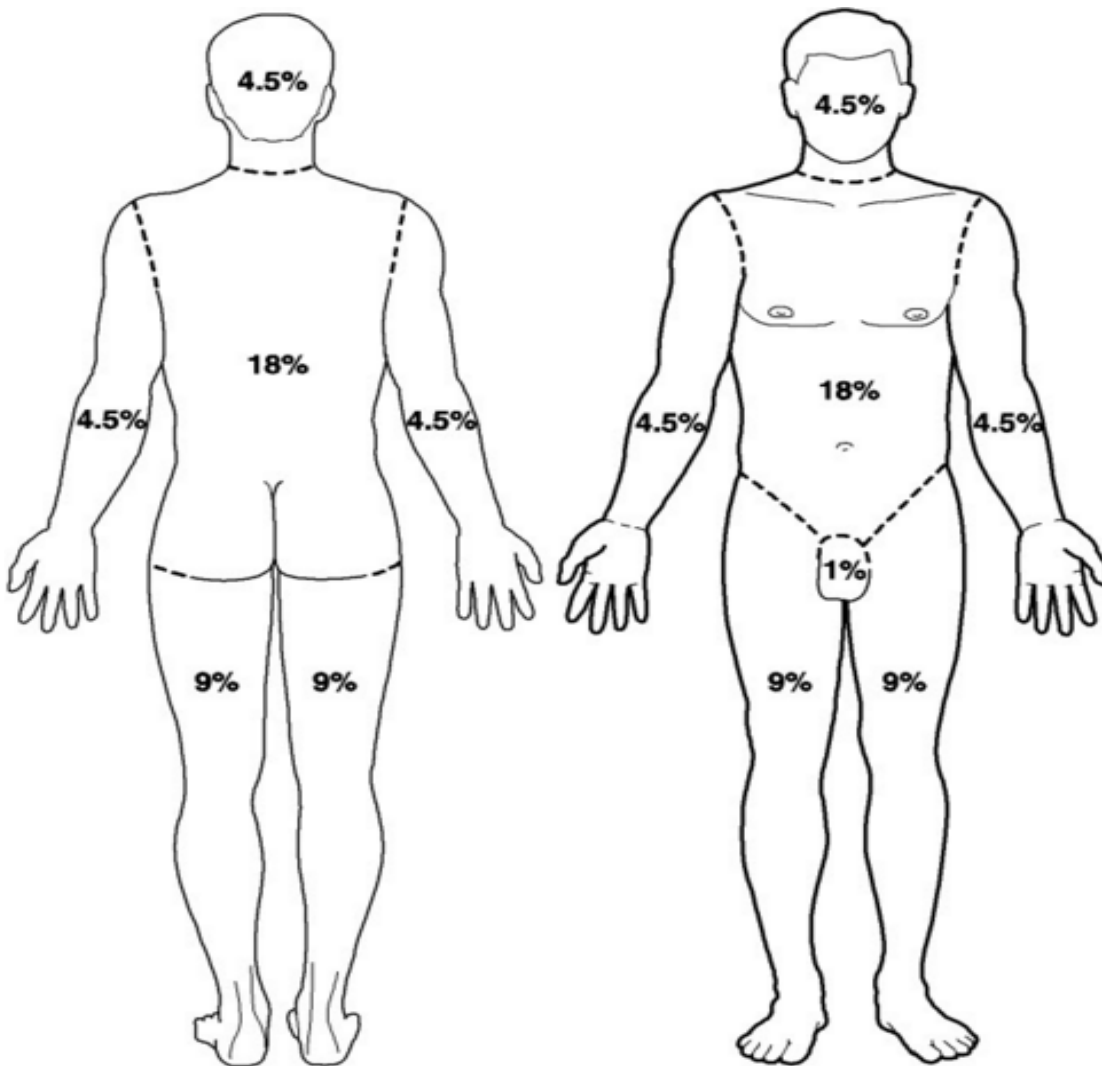
Electrical Burns

BASIC CARE GUIDELINES

- a) Ensure source of electrical burns has been removed
- b) Treat soft tissue injuries associated with the burn with dry dressing
- c) Note entry/exit points if possible
- d) Treat for shock if indicated (see shock protocol)
- e) Transport to the most appropriate medical facility

ADVANCED CARE GUIDELINES

- f) Refer to Pain Control protocol



CARDIAC ARRHYTHMIAS

1. Follow initial patient care protocol

If No Pulse

BASIC CARE GUIDELINES

- a) Perform high quality CPR immediately, apply AED and follow device prompts
- b) Compression-only CPR is appropriate if unable to support airway while applying and using AED
- c) May place appropriate airway if unable to adequately ventilate patient noninvasively, if does not interrupt compressions, or after return of spontaneous circulation
- d) May apply mechanical compression device (if available) after ensuring high quality compressions and application of AED. Emphasis on minimizing interruption of compressions.

ADVANCED CARE GUIDELINES

- e) Perform high quality CPR immediately, apply monitor and check rhythm as soon as possible
- f) Administer 2-4 mg **NALOXONE (Narcan)** 2mg IV, IO or Nasal

VENTRICULAR FIBRILLATION OR VENTRICULAR TACHYCARDIA

- g) Defibrillate at manufacturer's specification (Procedure), immediately resume CPR for two minutes
- h) Evaluate and treat for underlying causes
- i) Administer **EPINEPHRINE** 1:10,000 concentration 1 mg IV or IO every 3-5 minutes
- j) Consider **AMIODARONE** for refractory pulseless V-Tach or V-Fib 300 mg IV or IO, repeat at 150 mg in 5 minutes

TORSADES DE POINTES

- k) Consider **MAGNESIUM SULFATE** for Torsades de Pointes 1-2 g IV or IO, delivered over 5-20 minutes

ASYSTOLE/PEA

- k) Organize therapies such as rhythm and pulse checks, IV/IO access, medication administration and airway management around two minute cycles of CPR
- l) Evaluate for treatable causes (H's and T's)
- m) Administer **EPINEPHRINE** 1:10,000 concentration 1 mg IV/IO as soon as asystole or PEA is identified. Repeat every 3-5 minutes

Cardiac Arrhythmias With Pulse

BASIC CARE GUIDELINES

- a) Follow- Chest Pain protocol
- b) Assess and treat underlying causes

ADVANCED CARE GUIDELINES

BRADYCARDIA

- c) If symptomatic, administer **ATROPINE** 0.5 mg IV or IO every 3-5 minutes as needed to maximum dose of 3.0 mg
- d) Initiate transcutaneous pacing (Procedure) if blood pressure less than 90 systolic, atropine unsuccessful or atropine administration not immediately available.
OR
- e) Consider administering **DOPAMINE** infusion 5-20 mcg/kg/min IV/IO
OR
- f) Consider administering **EPINEPHRINE** infusion 2-10 mcg/min IV/IO

TACHYCARDIA (Symptomatic-Rates greater than 150)

- g) If patient unstable:
 Perform synchronized cardioversion (consider sedation)

- h) **If patient stable with wide QRS:**
 If regular and monomorphic, consider administration of **ADENOSINE** 6 mg IV, may be repeated at 12 mg after two minutes
 OR
 Consider administration of **AMIODARONE** 150 mg over 10 minutes IV or IO
 Refractory wide complex tachycardia requires synchronized cardioversion

- i) **If patient is stable with narrow QRS**
 Perform vagal maneuvers
 OR
 Consider administration of **ADENOSINE** 6 mg IV, may be repeated at 12 mg after two minutes
 Refractory wide complex tachycardia requires synchronized cardioversion

CHEST PAIN

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Place patient in position of comfort, loosen tight clothing and provide reassurance. If patient is complaining of shortness of breath, has signs of respiratory distress and pulse oximetry of less than 94% then titrate oxygen to maintain a saturation of 94 -96%
- b) If capability exists, obtain a 12-lead EKG and transmit to the receiving facility and/or medical control for interpretation as soon as possible.
- c) If patient is alert and oriented and expresses no allergy to aspirin have patient chew 324 mg **ASPIRIN**
- d) An initial management goal should be to identify STEMI and transport the patient with cardiac symptoms to the facility most appropriate for their needs
- e) Contact medical direction for orders.
- f) If the patient has been prescribed **NITROGLYCERIN** (patient's nitroglycerin only) and blood pressure is 90 mmHg systolic or above, give one dose .4mg SL. **If Pt is taking sexual enhancement drugs such as Sildenafil (Viagra), Vardenafil (Levitra), Avanafil (Stendra) or Tadalafil (Cialis), must contact medical direction prior to administering Nitroglycerin.**
- g) Repeat one dose of patient prescribed **NITROGLYCERIN** in 3-5 minutes if no relief, blood pressure is 90 mmHg systolic or above, and authorized by medical direction up to a maximum of three doses. Reassess vital signs and chest pain after each dose.
- h) If blood pressure less than 90 mmHg systolic or patient does not have prescribed nitro, transport promptly continuing assessment and supportive measures.
- i) Further assess the patient and evaluate the nature of pain (unless other treatment priorities exist). Refer to Appendix (Strategies for Reperfusion Therapy: ACS) as ordered by medical control.

ADVANCED CARE GUIDELINES

- j) If capability exists, **obtain a 12-Lead EKG and transmit** to the receiving facility as soon as possible and/or medical control for interpretation in the following situations:
 - a. ST elevation, suspected MI
 - b. Chest pain and LBBB
 - c. Chest Pain with abnormal EKG ST changes in patients over 25
 - d. Heart rate greater than 110/min with at least one unstable symptom which includes:
 - i. Chest pain
 - ii. Dizziness, or altered level of consciousness
 - iii. Dyspnea that appears to be related to the rapid heart rate (asthma or COPD is not causing the tachycardia)
 - e. Any heart rate greater than 139/min

ADVANCED CARE GUIDELINES (Continued)

- f. Any heart rate less than 50/min
 - k) 12-Lead EKGs may be obtained but NOT transmitted in the following situations:
 - g. Chest pain in patients less than 25 years of age
 - h. Paced rhythms (LBBB with pacer spikes before the beats; look for the presence of a pulse generator in the left or right upper chest region)
 - i. Patients with asthma and sinus tachycardia
 - l) Establish IV at TKO rate unless otherwise ordered or indicated.
 - m) Monitor EKG and treat dysrhythmias following the appropriate Medical Direction referencing current AHA guidelines
 - j) n) Administer **NITROGLYCERIN (tab or spray)** 0.4 mg sublingually if blood pressure 90mmHg systolic or above for symptoms of chest pain or atypical cardiac pain. **If Pt is taking sexual enhancement drugs such as Sildenafil (Viagra), Vardenafil (Levitra), Avanafil (Stendra) or Tadalafil (Cialis), must contact medical direction prior to administering Nitroglycerin.**
May be repeated every 5 minutes as needed and blood pressure is 90mmHg systolic or above. Up to a maximum of three doses should be administered before administering Fentanyl.
- If pain continues after administration of **NITROGLYCERIN** and systolic blood pressure remains above 90mmHg administer **Pain medications** following the AHA STEMI guidelines:
- a. STEMI / NSTEMI or UA If no relief after administration of Nitroglycerin and systolic blood pressure remains above 90 mmHg, administer **FENTANYL** 25 to 50mcg IV every 5 minutes as needed to a maximum of 100 mcg titrated until one of the following is present:
 - b. Relief of pain
 - c. Hypotension develops
 - d. Respiratory depression occurs
 - e. CNS depression results
 - f. Maximum IV dose has been admin.

ADVANCED CARE GUIDELINES (Continued)

Further assess the patient and evaluate the nature of pain (unless other treatment priorities exist).

- g. Complete an approved checklist to determine inclusion /exclusion criteria for thrombolytic therapy (Appendix)
- h. If ST segment elevation exists in 2 or more contiguous leads, activate a **“Cardiac / MI Alert”** and expedite (lights & siren) transport to a hospital for definitive care in an urgent manner.

Advise ED of the reason for the activation of the **“Cardiac / MI Alert”**

- i. In Patients with inferior wall injury pattern (ST elevation in leads II, III, and AVF), obtain Lead V4R and consider initiation of 2nd IV line en- route to ED
 - 1. Inferior wall MI or RVI with systolic blood pressure above 90 mmHg, administer **FENTANYL** 25 to 50mcg IV every 5 minutes as needed to a maximum of 100 mcg titrated until one of the following is present:
 - a) Relief of pain
 - b) Hypotension develops
 - c) Respiratory depression occurs
 - d) CNS depression results
 - e) Maximum IV dose has been admin.
 - i.
 - ii. Request a first responder to accompany patient to the hospital in the event resuscitation or advanced procedures are needed
 - iii. Place mechanical CPR device within the patient compartment for transport in the event that resuscitation is required, if available
- n) Continue to monitor the patient’s symptoms, vital signs, and rhythm; treat with the appropriate protocol(s) using current AHA/ACLS guidelines as needed (see Appendix)

CHILDBIRTH

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

Normal Delivery

- a) Allow controlled spontaneous delivery
- b) Support infant's head and body as it's delivered
- c) If delivery is imminent with crowning, commit to delivery on site and contact medical control.
- d) If the amniotic sac does not break, or has not broken, use a clamp to puncture the sac and push it away from the infant's head and mouth as they appear.
- e) Clamp cord with 2 clamps and cut the cord between the clamps.
- f) For newborn management, see newborn resuscitation protocol.

Abnormal Delivery

Breech Delivery (Buttocks Presentation)

- a) Allow controlled spontaneous delivery.
- b) Support infant's body as it's delivered.
- c) If head delivers spontaneously, proceed as in Section I (Normal Delivery).
- d) If head does not deliver within 3 minutes, insert gloved hand into the vagina, keeping your palm toward baby's face; form a "V" with your fingers and push wall of vagina away from baby's face, thereby creating an airway for baby. Do not remove your hand until relieved by advanced EMS or hospital staff.
- e) Contact medical control for any other issues.

Criteria	0	1	2
Appearance	Entire body blue or pale	Pink core, blue limbs	Completely pink
Pulse	No pulse	< 100	> 100
Grimace	None	Slight facial grimace	Grimace, coughs, sneezes, cries
Activity	Limp	Slight flexion	Active movement
Respiration	None	Slow, weak cry	Good respirations, strong cry

ADVANCED CARE GUIDELINES

- a) Establish IV access if patient condition warrants
- b) Apply appropriate patches and monitor EKG.

CONGESTIVE HEART FAILURE

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Place patient in position of comfort, typically sitting up, loosen tight clothing and reassure
- b) Maintain oxygenation with cannula or mask, titrated to 94% or greater
- c) Transport immediately if the patient has any of the following:
 - No history of cardiac problems
 - Systolic blood pressure of less than 100.
 - A history of cardiac problems, but does not have nitroglycerin
- d) If capability exists obtain a 12-lead EKG and if possible transmit it to the receiving facility and/or medical control for interpretation prior to patient's arrival
- e) Contact medical direction for orders
- f) If capability exists, apply **CPAP** with a HEPA filter. Refer to procedure, must be removed on arrival at the hospital.
- a) If the patient has been prescribed **NITROGLYCERIN** (patient's nitro only) Administer two 0.4mg **NITROGLYCERIN** tablets for hypertension with a systolic pressure above 150mmHg and one for a systolic blood pressure between 120 and 150mmHg. Repeat one **NITROGLYCERIN** 0.4mg tablet every five minutes maintaining a systolic BP of 120mmHg.
- g) **If Pt is taking sexual enhancement drugs such as Sildenafil (Viagra), Vardenafil (Levitra), Avanafil (Stendra) or Tadalafil (Cialis), must contact medical direction prior to administration of Nitroglycerin.**
- h) Repeat one dose of **NITROGLYCERIN** in 3-5 minutes if symptoms continue and systolic blood pressure is 90 mmHg or above with authorization by medical direction, up to a maximum of three doses
- i) Reassess patient and vital signs after each dose of Nitroglycerin
- j) Further assess the patient and evaluate possible causes (unless other treatment priorities exist)

ADVANCED CARE GUIDELINES

- b) If not already preformed obtain a 12-lead EKG and if possible transmit it to the receiving facility and/or medical control
- c) Establish IV access. Establish Flowing bag if **NITROGLYCERIN** is to be administered
- d) Administer two 0.4mg **NITROGLYCERIN** tablets for hypertension with a systolic pressure above 150mmHg and one for a systolic blood pressure between 120 and 150mmHg. Repeat one **NITROGLYCERIN** 0.4mg tablet every five minutes as long as the systolic BP is above 120mmHg.
- e) Monitor EKG and treat dysrhythmias following the appropriate protocol(s)
- f) Refer to Appendix Strategies for Reperfusion Therapy: ACS
- g) **If Pt is taking sexual enhancement drugs such as Sildenafil (Viagra), Vardenafil (Levitra), or Tadalafil (Cialis), must contact medical direction prior to admin. Nitroglycerin.**

DETERMINATION OF DEATH-WITHHOLDING RESUSCITATIVE EFFORTS

Follow initial patient care protocol

Resuscitation should be started on all patients who are found apneic and pulseless unless the following medical cause, traumatic injury or body condition clearly indicating biological death (irreversible brain death) such as:

- Signs of trauma are conclusively incompatible with life
 - Decapitation
 - Transection of the torso
 - 90% of the body surface area with full thickness burns
 - Massive crush injury
 - Apneic, pulseless in asystole and without other signs of life (movement, EKG activity, pupillary response)
- Cardiac and respiratory arrest with obvious signs of death including
 - Rigor mortis
 - Dependent lividity
- Physical decomposition of the body

OR

A valid DNR order (form, card, bracelet) or other actionable medical order (e.g. IPOST-POLST form) present, when it:

- Conforms to the state specifications
- Is intact: it has not been cut, broken or shows signs of being repaired
- Displays the patient's name and the physician's name

If apparent death is confirmed, continue as follows:

- a) The county Medical Examiner and law enforcement shall be contacted
- b) When possible, contact Iowa Donor Network at 1-800-831-4131.
- c) At least one EMS provider should remain at the scene until the appropriate authority is present
- d) Provide psychological support for grieving survivors
- e) Document the reason(s) no resuscitation was initiated
- f) Preserve the crime scene if applicable

DROWNING

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

- a) Establish patient responsiveness
- b) If cervical spine trauma is suspected, manually stabilize the spine
- c) Assess airway for patency, protective reflexes and the possible need for advanced airway management. Look for signs of airway obstruction
- d) Open the airway using head tilt/chin lift if no spinal trauma is suspected, or modified jaw thrust if spinal trauma is suspected
- e) Suction as necessary
- f) Consider placing an oropharyngeal or nasopharyngeal airway adjunct if the airway cannot be maintained with positioning and the patient is unconscious
- g) Assess breathing. Obtain pulse oximeter reading
- h) If breathing is inadequate, assist ventilation using an appropriate adjunct with high-flow, 100% concentration **OXYGEN**
- i) Assess circulation and perfusion
- j) If breathing is adequate, place the patient in a position of comfort and maintain oxygenation with cannula, mask or blow-by if oxygen saturations are below 94% titrate to 94-96%
- k) Assess mental status
- l) If spinal trauma is suspected, continue manual stabilization, apply a rigid cervical collar, and immobilize the patient on a long backboard or similar device
- m) Expose the patient only as necessary to perform further assessments. Maintain body temperature throughout the examination
- n) If the patient's condition is **unstable**, perform focused history and detailed physical examination **enroute**
- o) If the patient's condition is **stable**, perform focused history and detailed physical examination **on the scene**, then initiate transport

ADVANCED CARE GUIDELINES

- p) If the airway cannot be maintained by other means, including attempts at assisted ventilation, or if prolonged assisted ventilation is anticipated, consider advanced airway (see Airway Procedure).
- q) Confirm placement of endotracheal tube using clinical assessment and end-tidal CO₂ monitoring as per Airway Procedure
- r) Initiate cardiac monitoring and determine rhythm. Consult the appropriate protocol for treatment of specific dysrhythmias.
- s) Initiate IV / IO access.

ENVIRONMENTAL (HEAT AND COLD)

HYPERTHERMIA

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Remove from the hot environment and place in a cool environment (back of air conditioned response vehicle)
- b) Loosen or remove clothing
- c) Place in recovery position
- d) Initially cool patient by fanning
- e) Additionally, cool patient with cold packs to neck, groin and axilla
- f) If alert, stable and not nauseated, you may have the patient slowly drink small sips of water
- g) If the patient is unresponsive or is vomiting, transport to an appropriate medical facility with patient on their left side

ADVANCED CARE GUIDELINES

- h) Monitor EKG and treat dysrhythmias following the appropriate protocol(s)
- i) If patient's condition indicates, establish IV access.

HYPOTHERMIA

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Remove wet clothing
- b) If able, check core temperature or axillary
- c) Handle patient very gently, reducing excess peripheral venous return
- d) Cover patient with blankets and add hot packs to axilla and groin

ADVANCED CARE GUIDELINES

- e) Establish IV and administer warm IV fluids if available, do not administer cold fluids
- f) Monitor EKG and treat dysrhythmias following appropriate protocol.
- g) If body temp is confirmed or suspected to be below 86 degrees Fahrenheit in Cardiac Arrest
 - ONLY give epinephrine every 8 minutes if indicated
 - Defibrillation is indicated ONLY once
 - Consider spacing other medications used for resuscitation

FROST BITE

Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Remove the patient from the cold environment
- b) Protect the cold injured extremity from further injury (manual stabilization)
- c) Remove wet or restrictive clothing
- d) Do not rub or massage
- e) Do not re-expose to the cold
- f) Remove jewelry
- g) Cover with dry clothing or dressings

ADVANCED CARE GUIDELINES

- h) Establish IV access at a TKO rate. Use warmed IV fluid if possible
- i) Monitor EKG and treat dysrhythmias following appropriate protocol.
- j) Refer to pain control protocol

HAZ MAT -EMS RESPONSE TO AN INCIDENT

Purpose:

The purpose of this protocol is to outline actions that should be taken by Fire or Ambulance crews who respond to known or potential HAZ-MAT incidents prior to the arrival of the Fire Department HAZ-MAT team.

Requirements:

1. All Fire and Ambulance personnel who respond on emergency calls in Scott County shall be trained to a minimum of the HAZ-MAT Fire-Awareness level, as mandated by OSHA 29 CFR 1910.120(q), and the EMS/HM level 1 as defined in NFPA 473 chapter 2.

Procedure:

1. Hazardous materials may be found in virtually any situation, therefore responders must always be alert to the possibility that they may be dealing with a chemically contaminated individual or atmosphere.
2. Establish the Incident Command System
3. Upon recognition of a HAZ-MAT incident, the responder shall notify SECC and request the HAZ-MAT Team to respond to the incident. This notification may also be made while responding to the incident if information is received enroute indicating the incident involves a known hazardous material release. All vehicles should be parked pointed away from the incident as to expedite an evacuation if needed.
4. Remaining uphill and upwind, establish a **HOT** zone (as recommended in the DOT Emergency Response Guide) and secure that area. Without entering the **HOT** zone, attempt to identify the products involved by looking for any placards, labels, UN/NA numbers, or questioning any on scene personnel.
5. Any information found regarding the products involved should be relayed to the responding HAZ-MAT team. Consult with the responding HAZ-MAT team may be useful in individual situations.
6. While wearing appropriate PPE, and using a risk versus benefit analysis, emergency rescues of **viable** patients (snatch and grab) may be attempted. Under no circumstances shall body recovery be considered an emergency rescue. The level of risk that a rescuer takes to attempt a rescue shall be determined based on the hazard(s) that present at the scene. Emergency decontamination shall be immediately available to responders entering the contaminated area to attempt a rescue.
7. If there are contaminated victims present, Operations Level responder personnel, while wearing appropriate PPE, shall begin the emergency decontamination process by removal of out garments, followed by copious amounts of water.

HAZMAT –ON SCENE MEDICAL MONITORING

Purpose:

Due to the inherent hazards and physical stress present at Haz-Mat incidents, a system of on scene medical monitoring of Fire Department Haz-Mat team members is required. This protocol is to be utilized at all incidents where the Fire Department Haz-Mat team is operating or other incidents as deemed necessary by the **Incident Commander** or **Safety officer**.

Requirements:

1. One fully equipped ALS unit staffed with at least one Paramedic and one EMT will be called to respond to all Haz-Mat incidents for the purpose of on scene medical monitoring, and remain on scene until released by the IC.
2. All EMT's assigned to any Haz-Mat incidents for medical monitoring shall be trained to at least the First Responder/Awareness level as defined in OSHA 29 CFR 1910.120(q)(6)(ii), and the EMS/HM level 2 as defined in NFPA 473 chapter 3.
3. The crew assigned to medical monitoring shall be dedicated only to monitoring and treatment of Haz-Mat team members. The IC will order additional ambulances as necessary to cover additional assignments should the need arise (i.e. contaminated or injured civilians).

Procedure:

1. Upon arrival, the EMS responders shall report to the **Incident Commander** to get instructions on where to locate the medical sector. At this time, any relevant sections of the site safety plan should be reviewed and any chemical specific information (chemical name, spelling, signs of exposure, etc.) should be communicated.
2. The EMS unit should be located in the assigned location, and the crew and equipment shall be readied to perform Pre and Post entry monitoring. Necessary equipment includes (but is not limited to):
 - Stethoscope
 - B/P cuff
 - Oral and/or Tympanic thermometer
 - Cardiac monitor
 - Pulse oximeter
 - Scale (to be kept on Haz-Mat unit)
 - Medical monitoring forms
3. Prior to suiting up, Haz-Mat team members shall report to medical monitoring for a Pre-Entry exam. Applicable team members include: entry team, backup team, decontamination personnel, and others as requested by the **Safety Officer**. The Pre-Entry exam shall include the following criteria:
 - Medical history – should not include recent illness or injury
 - Meds – including ETOH consumption last 48 hrs.
 - Allergies – to any known substances
 - Skin – should be free of breaks or rashes
 - Lung sounds – should be free of any symptoms of a reactive airway

- Mental status – should be evaluated for excess stress
- EKG – a six-second EKG tracing (three lead) shall be recorded, and should be free of abnormalities.
- Vital signs – to include B/P, Pulse, Respirations, Oral or Tympanic temperature, Pulse Oximetry, and Weight.
- Vitals shall meet the following ranges:

	B/P	Pulse	Resp.	Temperature
Pre – Entry	150/94	100	24	100.0 (97.0) F
Post - Entry	156/94 (104/64)	155 (60)	28 (12)	100.4 (97.0) F

Minimum range is in ()

4. All team members shall hydrate with at least 16.9 ounces of water or sports drink prior to suiting up.
5. The EMS Crew shall report any concerns to the **EMS Branch Officer/Director**, who will confer with the **Safety Officer** on the member’s fitness for suit duty.
6. The medical sector shall attend all pre-entry briefings.
7. After decontamination, and post-entry briefing (if applicable), all Haz-Mat team members (as in #3) shall return to the medical sector for a Post – Entry exam. The exam will follow the same procedure as outlined in #3. In addition, immediately after the Post – Entry exam, the team member will be sent to the rehab sector for a minimum of twenty minutes. During this time the member should be provided ample fluids. After rehab the member should report to medical, and a final set of vitals recorded.
8. Steps #3 through #8 shall be repeated for every entry.
9. All information shall be recorded on the **Medical Monitoring Form** and turned into the **EMS Branch Officer/Director** by the EMS Crew upon being released from the incident. The medical monitoring form is required by OSHA standard to be filed with the incident reports.

Purpose:

This protocol is intended to provide an organized method for the packaging and transport of injured victims from HAZ-MAT incidents. This protocol is only to be utilized for incidents in which a HAZ-MAT team is operating. If a HAZ-MAT team is not operating at the scene of a potential HAZ-MAT incident, refer to the protocol for EMS Response to a HAZ-MAT Incident". It cannot be overstressed that the transport of a potentially contaminated victim to the ER creates the possibility of contaminating a great deal of personnel and equipment. Therefore, **no victims of a HAZ-MAT incident should be transported without the approval of the Incident Commander or his designee.**

Requirements:

All Fire and Ambulance personnel who respond on emergency calls in Scott County shall be trained to a minimum of the HAZ-MAT Fire-Awareness level, as mandated by OSHA 29 CFR 1910.120(q), and the EMS/HM level 1 as defined in NFPA 473 chapter 2.

Procedure:

1. Upon arrival at the Hazardous Materials scene, the EMS crew shall report to the **Incident Commander** for instructions.
2. Establish as needed an **EMS Branch Officer/Director** that will be responsible for the initial notification of the receiving facility and other medical duties as assigned.
3. Once briefed by the **EMS Branch Officer/Director**, the incoming ambulance crew shall take the necessary equipment (including patient stretcher with sheets/blankets) and stage **near** the decontamination area **in the cold zone**.
4. The HAZ-MAT team will provide ambulance crews with level "C" type splash protection if deemed necessary by the **EMS Branch Officer/Director**.
5. After the patient has completed the decontamination process, and presents **no further risk of secondary contamination**, the patient will be turned over to the ambulance crew for transportation.
6. a hard copy of any available chemical information. This will include at a minimum
7. the Chemical name and UN number, but additional information on the treatment of exposure will be provided as available.
8. The transportation of a victim who presents a potential for secondary contamination is a risky operation with many complex issues, and therefore is highly discouraged. In the case of a situation where it is deemed absolutely necessary by the **EMS Branch Officer/Director**, he **MUST** notify Medical Control of the circumstances surrounding the patient and await further instructions. These instructions will be provided to the ambulance crew.

NAUSEA AND VOMITING / GI DISTURBANCE

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Give nothing by mouth
- b) Transport in position of comfort
- c) Allow patient to continuously smell an alcohol prep while preparing for ALS

ADVANCED CARE GUIDELINES

- d) Establish IV/IO Access
- e) Consider fluid bolus IV/IO of 250ml **NORMAL SALINE** if evidence of hypovolemia and lung sounds are clear
- f) If patient nauseated or is vomiting, consider anti-emetic medication such as **ONDANSETRON (Zofran) 4 mg IV**

OVERDOSE

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

- a) Obtain blood glucose
- b) Consider **NALOXONE (Narcan)** 2-4mg Intranasal, if no response, may repeat in 3 min if narcotic overdose is suspected and blood sugar is greater than 60 mg/dL

ADVANCED CARE GUIDELINES

- c) Establish IV access.
- d) If blood sugar is less than 60 mg/dL administer **50% Dextrose** 12.5 – 25 grams IV/IO
- e) If no vascular access administer **GLUCAGON** 1 mg IM
- f) If no response with glucose, administer **NALOXONE (Narcan)** 2-4mg IV (or intranasal if IV access is not available), if no response, may repeat in 3 min.
- g) If blood sugar is greater than 60mg/dl administer **NALOXONE (Narcan)** 2-4mg IV (or intranasal if IV access is not available), if no response, may repeat in 3 min if narcotic overdose is suspected.
- h) If no response, reassess ventilation and consider intubation

Bradycardia with Unknown Overdose:

- a. Consider **ATROPINE** 0.5 mg IV every 5 minutes as needed to maximum of 3 mg.
- b. Consider **DOPAMINE** (Intropin) infusion 5-15 mcg/kg/min
- c. Consider transcutaneous pacemaker

Tachycardia with Unknown Overdose:

- a. Provide IV fluid bolus with **NORMAL SALINE** 20ml/kg up to 250ml
- b. Consider benzodiazepine such as
 1. **MIDAZOLAM** 0.5-2.5 mg IV / IM repeated every 5 minutes as needed to a maximum of 5 mg
- c. Consider **SODIUM BICARBONATE** 1 mEq/kg IV for dysrhythmias refractory to benzodiazepines (especially those with a wide QRS complex or prolonged QT)
- d. Cool patients presenting with agitation, delirium, seizure and elevated body temperature

Calcium Channel Blocker or Beta Blocker Overdose:

- a. Consider **CALCIUM CHLORIDE** [1 g/10 mL] 2 g IV over 5 minutes
 - i. May repeat x 1 in 5 minutes if persistent EKG changes
 - ii. Calcium therapy is contraindicated for patients taking digitalis
- b. Consider **GLUCAGON** 1 mg slow IV push over 1-2 minutes, may repeat in 10-15 minutes if no response is seen

Digitalis Overdose:

- c. Consider normal saline IV
- d. Consider **ATROPINE** 0.5 mg IV every 5 minutes as needed to maximum of 3 mg
- e. Consider transcutaneous pacemaker

Tri Cyclic Antidepressant (Elavil, Tofranil) Overdose:

- f. Consider **SODIUM BICARBONATE** 50mEq IV for wide complex QRS
- g. Be cautious for seizures

PAIN CONTROL

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) First, attempt to manage all painful conditions:
 - Splint extremity injuries
 - Place the patient in a position of comfort

ADVANCED CARE GUIDELINES

- a) Establish a large bore IV if indicated as patient condition warrants.
- b) Monitor ECG and O2 saturations
- c) For patients that have a significant pain, do not have a decreased level of consciousness, which are hemodynamically stable, with oxygen saturations above 94%. Administer an analgesic titrated to make the patient comfortable. Example:
 - **FENTANYL** 25 mcg IV or Intranasal (via MAD Device) every 5 minutes as needed up to a maximum of 100 mcg.
- d) Consider administration of **ONDANSETRON (ZOFRAN)** 4mg IV after Fentanyl to reduce nausea from medication.
- e) If respiratory depression is present after the administration of narcotics, give **NALOXONE (NARCAN)** 2-4mg IV or Intranasal (via MAD Device).

POISONING

1. Follow initial patient care protocol
2. Consider Haz-Mat request if needed
3. Identify contaminate and call Poison Control and follow directions given to provide care:
1-800-222-1222 –or- 1-800-352-2222
4. Contact Medical Direction as soon as possible with information given by Poison Control and care given and possible substance.

BASIC CARE GUIDELINES

Ingested poisons

- a) Identify and estimate amount of substance ingested. Take container to receiving facility when feasible.
- b) Contact your Medical Direction facility as soon as possible with the substance ingested, so they can contact the Poison Control Center if indicated.
- c) DO NOT induce vomiting unless directed to do so by Medical Direction.

Inhaled poisons:

- a) Remove patient to fresh air
- b) Administer high flow **OXYGEN**.
- c) Estimate duration of exposure to inhaled poison.

Absorbed poisons

- a) Identify contaminate! If it will be a hazard to you, use protective clothing and extreme caution.

Injected poisons

- a) Be alert for respiratory difficulty. Maintain airway and give high flow **OXYGEN**
- b) Check patient for marks, rashes, or welts

ADVANCED CARE GUIDELINES

- a) Monitor EKG and treat dysrhythmias if indicated following the appropriate protocol.
- b) Initiate IV access.

SUSPECTED HYPERKALEMIA CONSIDERATIONS

1. Identify patients who are at risk for hyperkalemia (acute/chronic renal failure, oral potassium overdose, history of dialysis)
2. Signs/symptoms of hyperkalemia include EKG changes (tall peaked T waves, short QT interval, prolonged PR interval, widened QRS, V-Fib, heart block, asystole), weakness, ascending paralysis, nausea, vomiting, & diarrhea.
3. **Contact Medical Control for orders**; consider the following therapy:
 - a) **CALCIUM CHLORIDE 10%-10mL** push
 - b) **SODIUM BICARBONATE 8.4% 50mEq** IV push
 - c) **ALBUTEROL** unit dose nebulizer

POST RESUSCITATION WITH RETURN OF SPONTANEOUS CIRCULATION

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Maintain oxygen saturation between 94% - 96%
- b) Attempt to maintain targeted temperature management
- c) If available, obtain blood glucose and treat per altered mental status protocol
- d) If capability exists, obtain a 12-lead EKG and transmit it to the receiving facility and/or medical control for interpretation prior to patient's arrival

ADVANCED CARE GUIDELINES

- e) If available, perform waveform capnography, maintaining PETCO₂ 35-40 mm Hg
- f) Treat hypotension per shock protocol

PREGNANCY EMERGENCIES

Indication: Any Pregnant or Post-partum patient \leq 6 weeks post-delivery with severe range blood pressure disorder, defined as systolic or diastolic of 160/110 or greater or seizure activity

3. Follow initial patient care protocol

BASIC CARE GUIDELINES

- h) Maintain oxygen saturation between 94% - 96%
- i) Protect airway
- j) Protect patient from injury, by clearing area of all possible hazards.
- k) Monitor duration and type of seizure
- l) Check blood glucose level, if available, and treat hypoglycemia if present

ADVANCED CARE GUIDELINES

Pregnancy Induced Hypertension/Pre-eclampsia

1. If Systolic Blood Pressure is 160 **or** Diastolic Blood Pressure is 110 or greater administer **MAGNESIUM SULFATE** 4 grams/100 mL NS IVPB (**Macro Drip, 10 drop set**) over 20 minutes (50 gtts / minute) **AND LABETALOL** 20 mg IV push over 1 minute;
2. Recheck BP in 20 minutes; if still either Systolic Blood Pressure greater than 160, or Diastolic Blood Pressure greater than 110, contact Medical Control

Pregnancy Induced Hypertension/Eclampsia (History of Recent or Active Seizure)

1. Administer **MAGNESIUM SULFATE** 4 grams/100 mL IVPB (**Macro Drip, 10 drop set**) over 10 minutes (100 gtts / minute) **AND LABETALOL** 20 mg IV push over 1 minute
 - a. May repeat X1 if seizure activity does not subside in 5 minutes
2. If seizure activity does not subside, administer **MIDAZOLAM** 1 mg IV push

Active Seizure, Normotensive Pregnant Female

1. Confirm BP *less than* 160/110
2. Administer **MAGNESIUM SULFATE** 4 grams/100 mL NS IVPB (**Macro Drip, 10 drop set**) over 10 minutes (100 gtts / minute) **AND MIDAZOLAM** 1mg IVP
 - a. May repeat X1 if seizure activity does not subside in 5 minutes

SEIZURE

1. Follow initial patient care protocol

Active Seizure

BASIC CARE GUIDELINES

- a) Protect airway
- b) Protect patient from injury, by clearing area of all possible hazards.
- c) Monitor duration and type of seizure
- d) Check blood glucose level, if available, and treat hypoglycemia if present

ADVANCED CARE GUIDELINES

- e) Monitor EKG and treat dysrhythmias if indicated following the appropriate protocol.
- f) Initiate IV access.
- g) Give **MIDAZOLAM (Versed)** 5mg **IV, IO, IM or Intranasal** via MAD device.
- h) Check blood glucose level, if available, and treat hypoglycemia if present

Post Seizure

BASIC CARE GUIDELINES

- a) Protect airway
- b) Check blood sugar, if available, and treat hypoglycemia if present per altered mental status protocol

ADVANCED CARE GUIDELINES

- a) Monitor EKG and treat dysrhythmias if indicated following the appropriate protocol.
- b) Initiate IV access.
- c) Administer **DEXTROSE** 25gm of 50% solution IV/IO push if blood sugar less than 60 mg/dL, especially if no prior history of seizure disorder.

SEPSIS

- a. Follow Initial Protocols for All Patients
- b. Emergency Medical Care:
 1. If medical or trauma emergency, refer to appropriate protocol.
 2. Allow position of comfort.
 3. Take proper body substance isolation.
 4. Give nothing by mouth.
 5. Obtain a temperature on the patient.
 6. Monitor and report End Tidal Capnography

Sepsis Box #1-Risk Factors for Sepsis

- *Nursing Home Resident
- *Recent influenza/viral illness
- *Immunosuppression
- *Splenectomy
- *Recent surgery/invasive procedure
- *Recent hospitalization
- *Productive cough
- *Diarrhea
- *Fever, chills, rigors
- *Alteration in mental status

If patient presents with a Risk Factor for Sepsis, proceed to Box #2 additional "History Questions"

Sepsis Box #2-History, physical exam or suspicion of the following

1. Pneumonia
2. UTI/Urinary bladder catheter
3. Acute abdominal infection
4. Meningitis
5. Skin/soft tissue/wound infection
6. Bone/joint infection
7. Peripheral IV/PICC line infection
8. Endocarditis
9. Implantable device infection

If "yes" to any of the above "History Questions" proceed to Box #3, SIRS criteria

SEPSIS (CONTINUED)

Sepsis Box #3- Systemic Inflammatory Response Syndrome (SIRS) Criteria

1. Temperature > 100.9 or < 96.8F?
2. End tidal CO₂ of < 32 mm Hg?
3. HR > 90/min?
4. RR > 20/min?
5. Acutely altered mental status?
6. Glucose > 120 mg/dL?

Special Considerations

Advise the receiving facility of a “Sepsis Alert” if the answer is “YES” to at least one question in each of the first two Sepsis boxes, and at least two questions in the third box.

BASIC CARE GUIDELINES

- a) Transport in position of comfort. Place patient on oxygen if patients condition warrants

ADVANCED CARE GUIDELINES

- b) Establish IV access and administer a rapid 250-500 mL **NORMAL SALINE** fluid bolus.
- c) Initiate IO access if unable to establish IV access
- d) Monitor cardiac rhythm and end tidal capnography.
- e) Maintain normal body temperature

SEVERE RESPIRATORY INFECTION

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Transport in position of comfort.
- b) Administer **OXYGEN**, titrated to Oxygen saturations above 94%
- c) Advise receiving facility of a "Isolation Alert"
- d) Place a surgical mask on the patient and an N95 mask and eye protection on responders.

ADVANCED CARE GUIDELINES

- e) If patient's condition indicates, establish IV.
- f) Consider monitoring rhythm if condition warrants.

"Isolation Alerts" should be called on any patient with a fever over 100 degrees F with persistent cough or, sore throat.

SHOCK (MEDICAL)

Cardiogenic

BASIC CARE GUIDELINES

- a) Place in position of comfort
- b) If capability exists, obtain a 12-lead EKG and transmit it to the receiving facility and/or medical control for interpretation prior to patient's arrival

ADVANCED CARE GUIDELINES

- c) Establish IV/IO access
- d) Obtain 12-lead EKG
- e) Administer **DOPAMINE** IV or IO at 10-20/mcg/kg/min

Obstructive Shock: Pulmonary Embolus

BASIC CARE GUIDELINES

- a) Place in a position of comfort
- b) Avoid further heat loss

ADVANCED CARE GUIDELINES

- c) Administer 20 ml/kg, up to 500ml, **NORMAL SALINE**. Repeat as needed to maintain a systolic pressure of 90 mmHg
- d) If available, obtain 12-lead EKG
- e) Evaluate the need for pain and nausea control
- f) If patient is alert and oriented and expresses no allergy to aspirin, consider having patient chew non-enteric **ASPIRIN** 160 – 325 mg
- g) Consider administration of **DOPAMINE** IV or IO at 10-20/mcg/kg/min if systolic blood pressure is less than 90 mmHg.

Distributive Shock: Septic (See Sepsis Protocol)

BASIC CARE GUIDELINES

- a) Maintain oxygen saturation between 94% - 99%
- b) Place patient in supine position
- c) If temperature is over 102°F/38.9°C, cool patient (i.e. cool sponges)

ADVANCED CARE GUIDELINES

- d) Administer 20 ml/kg, up to 500ml, **NORMAL SALINE**. Repeat as needed to maintain a systolic pressure of 90 mmHg
- e) If temperature is over 102°F/38.9°C, cool patient
- f) Consider administering **DOPAMINE** at 10-20 mcg/kg/min IV or IO
- g) Consider administering **DIPHENHYDRAMINE** 25 – 50 mg IV/IM

SHOCK (TRAUMATIC)

1. Follow initial patient care protocol
2. Maintain oxygen saturation between 94% - 99%

Hypovolemic External Bleeding

BASIC CARE GUIDELINES

- a) Avoid further heat loss
- b) Splint extremities as needed
- c) Follow Hemorrhage Control Protocol
- d) Control bleeding with direct pressure. Large gaping wounds may need application of a bulky sterile gauze dressing and direct pressure by hand
- e) Consider application of tourniquet and /or packing of hemostatic gauze if unable to control hemorrhage with direct pressure
- f) Apply a second tourniquet immediately adjacent to the first if needed to control bleeding

ADVANCED CARE GUIDELINES

- g) Establish IV/IO access
- h) If radial pulse is absent or systolic blood pressure is less than 90 mmHg, administer 20ml/kg, up to 250ml, **NORMAL SALINE**. Repeat as needed to until radial pulse returns or systolic blood pressure reaches 90 mmHg.
- i) Administer **TRANEXAMIC ACID** 1000mg IV/IO infusion as soon as feasible for trauma patients with bleeding and a blood pressure under 90mmHg systolic.

Hypovolemic Internal Bleeding

BASIC CARE GUIDELINES

- a) Place patient in supine position
- b) Consider use of pelvic stabilizer for pelvis fractures

ADVANCED CARE GUIDELINES

- c) Establish IV/IO access
- d) If radial pulse is absent or systolic blood pressure is less than 90 mmHg, administer 20ml/kg, up to 250ml, **NORMAL SALINE**. Repeat as needed to until radial pulse returns or systolic blood pressure reaches 90 mmHg.
- e) Administer **TRANEXAMIC ACID** 1000mg IV/IO infusion as soon as feasible for trauma patients with bleeding and a blood pressure under 90mmHg systolic.

SHOCK (TRAUMATIC) CONTINUED

Distributive Shock: Neurogenic

BASIC CARE GUIDELINES

- a) Place supine
- b) Avoid further heat loss

ADVANCED CARE GUIDELINES

- c) Administer 20 ml/kg, up to 500ml, **NORMAL SALINE**. Repeat as needed to maintain a systolic pressure of 90 mmHg
- d) Consider administering **DOPAMINE** at 10-20 mcg/kg/min IV or IO
- e) If symptomatic bradycardia is present and does not respond to the treatments above, consider:
 - Administering **ATROPINE** 0.5 mg every 5 minutes, up to 3 mg
 - OR
 - Transcutaneous pacing

Obstructive Shock: Pericardial Tamponade

BASIC CARE GUIDELINES

- a) Place in a position of comfort

ADVANCED CARE GUIDELINES

- b) The goal should be to minimize scene time with time critical injuries, including establishing IV access en route.
- c) Administer 20 ml/kg, up to 500ml, **NORMAL SALINE**. Repeat as needed to maintain a systolic pressure of 90 mmHg.

Obstructive Shock: Tension Pneumothorax

BASIC CARE GUIDELINES

- a) Place in a position of comfort

ADVANCED CARE GUIDELINES

- b) Perform an Needle decompression (See Procedure)

SPINAL CARE

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

2. Patient Presentation:

- a) This protocol is intended for patients who present with a traumatic mechanism of injury.
- b) Spinal motion restriction is contraindicated for patients who have penetrating trauma who do not have a suspected spine related neurological deficit.

3. Patient Management:

- c) Assessment:

- Assess for mental status, neurological deficits, spinal pain, tenderness, evidence of intoxication, tenderness on palpation or deformities.

- d) Treatment and Interventions:

- **Apply cervical restriction if there is any of the following:**

1. Patient complains of neck pain.
2. Any neck tenderness on palpation.
3. Any abnormal mental status, including extreme agitation or neurological deficit.
4. Any evidence of alcohol or drug intoxication
5. Severe or painful injuries present.
6. Any communication barrier that prevents accurate assessment.

- **Spinal and cervical motion restriction and a long spine board, full body vacuum splint, scoop stretcher, or similar device if:**

1. Patient complains of midline back pain
2. Any midline back tenderness

4. Note 1: Distracting injuries or altered mental status does not necessitate long spine board use.
 5. Note 2: Patients should not routinely be transported on long boards, unless the clinical situation warrants long board use. An example of this may be facilitation of multiple extremity injuries or an unstable patient where removal of a board will delay transport and/or other treatment priorities. In these rare situations, long boards should be padded or have a vacuum mattress applied to minimize secondary injury to the patient.
-

STROKE

1. Follow initial patient care protocol

BASIC CARE GUIDELINES

- a) Attempt to obtain a history for time of onset, including the exact time the patient was last seen as “normal”.
- b) Perform a MEND Pre-hospital Stroke Scale - checking facial droop, arm drift, speech, coordination and time of onset (see below). Notify receiving facility as soon as possible if stroke is suspected
- c) Check blood glucose
- d) Activate a field “STROKE ALERT” for patients with the onset of the above symptoms and last seen as normal, or time of onset within **4.5 hours**. Transport these patients emergently to the ED.
- e) Refer to Appendix (Strategies for Reperfusion Therapy: Acute Stroke)
- f) Protect affected limbs from injury during transport, and take care to maintain body heat.
- g) Transport patient supine
- h) Scene time should not exceed 10 minutes unless extenuating circumstances exist.
- i) Place patient in position of comfort, loosen tight clothing and provide reassurance.
- j) If patient is complaining of shortness of breath, has signs of respiratory distress and pulse oximetry of less than 94% then titrate oxygen to maintain a saturation of 94-99%

ADVANCED CARE GUIDELINES

- k) If patient's condition indicates, establish IV access.
- l) If blood sugar less than 60 give **D₅₀** 12.5 - 25 grams IV/IO or **GLUCAGON** 1mg IM if no IV access available
- m) Monitor EKG and treat dysrhythmias following appropriate protocol.
- n) Monitor and maintain patient airway, including intubation if necessary.

MEND EXAM—PERFORM EN ROUTE		Check If Abnormal	
MENTAL STATUS	Level of Consciousness (AVPU)		
	Speech (repeat “You can’t teach an old dog new tricks”)		
	Questions (age, month)		
	Commands (close, open eyes)		
CRANIAL NERVES	Facial Droop (show teeth or smile)	R	L
	Visual Fields (four quadrants)	R	L
	Horizontal Gaze (side to side)	R	L
LIMBS	Motor—Arm Drift (close eyes and hold out both arms)	R	L
	Motor—Leg Drift (open eyes and lift each leg separately)	R	L
	Sensory—Arm and Leg (close eyes and touch, pinch)	R	L
	Coordination—Arm and Leg (finger to nose, heel to shin)	R	L

TERMINATION OF RESUSCITATIVE EFFORTS

Indications to consider termination of resuscitation:

1. Advanced level care (Paramedic level) has been instituted to include rhythm analysis and defibrillation if indicated, airway management, and medications given per protocol
2. No return of spontaneous circulation or respiration
3. Correctable causes or special resuscitation circumstances have been considered and addressed
4. Patient does not have profound hypothermia
5. Patient has no other signs of life (no response to pain, non-reactive pupils, no spontaneous movement)

Termination of resuscitation:

1. A valid DNR order, such as IPOST or POLST, is obtained by the EMS provider at any level
 - a. Patient meets all criteria under 'indications' above and as applicable to scope of practice
On-line medical direction is contacted (while advanced care continues) to discuss any further appropriate actions.
 - b. Advanced care may be discontinued if *physician on-line medical direction* authorizes.

Other considerations:

1. Documentation must reflect that the decision to terminate resuscitation was determined by *physician on-line medical direction*.
2. An EMS/health care provider must attend the deceased until the appropriate authorities arrive.
3. All IVs, tubes, etc. should be left in place until the medical examiner authorizes removal.
4. Implement survivor support plans related to coroner notification, funeral home transfer, leaving the body at the scene, and death notification/grief counseling for survivors.
5. See Appendix for EMS Provider Initiating Organ and Tissue Donation at the Scene of the Deceased.

TRAUMA

1. Follow Initial Patient Care Protocol for all patients
2. Follow the Out-of-Hospital Trauma Triage Destination Decision (Appendix) Protocol for the identification of time critical injuries, method of transport and destination decision for treatment of those injuries.
3. The goal should be to minimize scene time (Ten minute maximum) with time critical injuries, including establishing IV's and completing other procedures en-route.

Hemorrhage Control

BASIC CARE GUIDELINES

- a) Control bleeding with direct pressure. Large gaping wounds may need application of a bulky sterile gauze dressing and direct pressure by hand
- b) If direct pressure/pressure dressing is ineffective or impractical, apply a tourniquet to extremity or hemostatic wound packing if unable to control bleeding with a tourniquet.
- c) If bleeding site is not amenable to tourniquet placement (i.e. junctional injury), pack the wound with gauze containing hemostatic agent.

ADVANCED CARE GUIDELINES

- d) Establish IV of Normal Saline using a size-appropriate large-bore catheter with macro drip tubing to maintain a systolic pressure of 90-100 mmHg for shock. If intravenous (IV) access cannot be obtained, proceed with interosseous (IO) access. Do not delay transport to obtain vascular access.
- e) Consider administration of **TRANEXAMIC ACID** 1000 mg IV/IO infusion as soon as feasible for all trauma patients with bleeding and a blood pressure under 90mmHg systolic.

Chest Trauma

BASIC CARE GUIDELINES

- a) Seal open chest wounds immediately. Use commercially available occlusive dressing. If the breathing becomes worse, loosen one side of the dressing to release pressure and then reseal
- b) Impaled objects must be left in place and should be stabilized by building up around the object with multiple trauma dressings or other cushioning material
- c) Take care that the penetrating object is not allowed to do further damage

ADVANCED CARE GUIDELINES

- a) Establish large bore IV. Give fluid challenge per Shock Protocol. Consider repeat fluid challenge if hypotension persists and there is no evidence of CHF or pulmonary edema.
- b) Start second large bore IV if patient condition warrants
- c) IV lines should be started en-route to the hospital, except when there is an unavoidable delay as a result of a prolonged extrication, etc.
- d) Monitor EKG and treat dysrhythmias if indicated following the appropriate protocol.
- e) Activate a Field Trauma Alert if patient condition meets Trauma Alert Criteria (Appendix)
- f) Consider needle chest decompression (en-route to ED unless an unavoidable delay exists) if signs and symptoms of a tension pneumothorax exist

Abdominal Trauma

BASIC CARE GUIDELINES

- a) Control external bleeding. Dress open wounds to prevent further contamination
- b) Evisceration should be covered with a sterile saline soaked occlusive dressing
- c) Impaled objects should be stabilized with bulky dressings for transport

ADVANCED CARE GUIDELINES

- a) Prevent heat loss and maintain normal body temperature Establish large bore IV. Give fluid challenge per Shock Protocol. Consider repeat fluid challenge if hypotension persists and there is no evidence of CHF or pulmonary edema.
- b) Start second large bore IV if patient condition warrants
- c) IV lines should be started enroute to the hospital, except when there is an unavoidable delay as a result of a prolonged extrication, etc.
- d) Monitor EKG and treat dysrhythmias if indicated following the appropriate protocol.
- e) Activate a Field Trauma Alert if patient condition meets Trauma Alert Criteria (Appendix)

Head, Neck, and Face Trauma

BASIC CARE GUIDELINES

- a) Establish and maintain manual spinal stabilization.
- b) Place the head in a neutral in-line position unless the patient complains of pain or the head is not easily moved into position.
- c) Apply appropriate spinal immobilization according to the selective spinal immobilization protocol.
- d) Consider eye shield for any significant eye trauma. If globe of eye is avulsed, do not put it back into socket: Cover with moist saline dressing and place a cup over it.
- e) Closely monitor the airway. Provide suctioning of secretions or vomit as needed. Be prepared to log roll the patient if they vomit. Maintain manual spinal stabilization if patient is log rolled.
- f) Impaled objects in the cheek may be removed if causing airway problems, or you are having trouble controlling bleeding. Use direct pressure on injury after removal to control any bleeding
- g) Reassess vitals and Glasgow Coma Score (GCS) frequently

ADVANCED CARE GUIDELINES

- a. Consider intubation if GCS is less than 8 or airway cannot be maintained.
- b. If patient is intubated or has an advanced airway device, ETCO₂ levels must be continually monitored and maintained at 35 – 45 mmHg if available
- c. Reassess vitals and Glasgow Coma Score (GCS) frequently
- b) Monitor EKG and treat dysrhythmias if indicated following the appropriate protocol.
- c) Initiate IV access.

Extremity Injuries

BASIC CARE GUIDELINES

- a) Assess extent of injury including presence or absence of pulse
- b) Establish and maintain manual stabilization of injured extremity by supporting above and below the injury
- c) Remove or cut away clothing and jewelry
- d) Cover open wounds with a sterile dressing
- e) Do not intentionally replace any protruding bones
- f) Apply cold pack to area of pain or swelling
- g) If severe deformity of the distal extremity is cyanotic or lacks pulses, align with gentle traction before splinting, and transport immediately

Initial Treatment Protocol

This protocol should be followed until superseded or overridden by a community disaster plan.

1. Follow Initial Protocols For All Patients:

A Mass Casualty Incident (MCI) can be defined as an incident that has produced more casualties than a customary response assignment can handle.

- a) The first responding EMS unit should declare a possible major incident while enroute to the scene if the dispatch information suggests the likelihood that one exists. As soon as possible upon arrival to the scene, the unit should verify that a major incident does or does not exist.
 - b) An MCI-I is initiated for 3-10 patients. ***A minimum of 2 ambulances will respond to an MCI-I.***
 - c) An MCI-II is initiated for greater than 10 patients. An MCI-I may be upgraded to an MCI-II because of scene factors, triage severity, or other identified reasons.
 - d) Request additional resources including number and type, prior to becoming involved in the incident whenever possible.
 - e) During events where the Incident Command Structure has been set up, resources responding to the scene shall report to a staging area as directed.
2. Establish the Incident Command Structure as required. The most qualified EMS provider will take charge of overall incident at scene until relieved by a Fire Department Incident Commander(IC). At that point, the IC may establish an EMS Task Force (or on a large scale incident an EMS Branch), where the first arriving EMS provider will be the task force leader until relieved by higher trained EMS person. The IC may consider a unified Incident Command System that will coordinate all emergency response personnel, i.e., law, fire, rescue, ambulance, etc.).
- a) Consider use of S.T.A.R.T. or Jump S.T.A.R.T. (Simple Triage And Rapid Treatment. Protocol Procedures Algorithm appendix) to assist with initial triage of multiple patients.
 - b) As patients are moved to Treatment areas according to priorities, continue to assess and treat as necessary.
3. Responsibilities of the EMS Task Force Leader (or EMS Branch Director):
- a) Will call for additional assistance, as needed and be in charge of the EMS Task Force/EMS Branch.
 - b) Establish Triage Coordination

- a. Responsibilities of coordinating triage include
 - i. Is in charge of ALL equipment and will decide priorities of care and assignment of EMS personnel in Treatment area.
 - ii. Will notify receiving hospital(s) as soon as possible, of number of patients, and estimated severity, so hospital(s) can activate disaster plans.
 - iii. Will make transport assignments and patient care assignments consistent with priority of patient. (Priority I, **(Red)** should have highest level of out-of-hospital care at scene and en-route).
 - iv. Works with EMS Task Force Leader to ensure the transport of Priority I's (**Red**) first, then II's (**Yellow**), III's (**Green**) then IV's (**Black**) last.
 - v. Coordinate with EMS Task Force Leader throughout incident.

- c) Patients should be moved to Treatment area in the following order after triage.
 - 1. Priority I (Red)
 - 2. Priority II (Yellow)
 - 3. Priority III (Green)

- d) (Exception: if a Priority I (**Red**) is trapped, II's (**Yellow**) could be moved until rescue has been accomplished.

4. EMS Task Force will remain in operation until released by the incident commander.

Triage Color Code	
Red	Immediate (Priority I)
Yellow	Delayed (Priority II)
Green	Minor (Priority III)
Black	Deceased (Priority IV)
Blue	Refusal (Priority III)

This is the only acceptable color coding system.

(Each service must have an identifying system in place such as color coded triage).

For patient triage color determination, refer to Out of Hospital Trauma Triage Destination Decision Protocol for both adult and pediatric. (Appendix)