

Iowa Department of Public Health
BUREAU OF EMERGENCY MEDICAL SERVICES

LENOX AMBULANCE
EMS TREATMENT PROTOCOLS
ADULT & PEDIATRIC

February 2011



“Promoting and Protecting the Health of Iowans through EMS”

LUCAS STATE OFFICE BUILDING
DES MOINES, IOWA 50319-0075
(515) 281-3741
(800) 728-3367
www.idph.state.ia.us/ems



Preface & Acknowledgments

The 2011 Iowa Statewide *EMS Treatment Protocols, Adult & Pediatric*, replaces the former 2009 protocols with a number of revisions. Once approved by your EMS medical director, the Bureau recommends all staff review these protocols. Services must maintain documentation of training.

We would like to acknowledge the members of the Quality Assurance & Standard Protocol Committee for the time and effort given to developing this set of protocols.

In addition, we would like to recognize the efforts of the Iowa EMS Advisory Council for their input and review.

Kirk E. Schmitt, Chief
Bureau of EMS

The complete “Iowa Statewide *EMS Treatment Protocols, Adult & Pediatric*” is also available on the Iowa Department of Public Health website
<https://www.idph.state.ia.us/ems/>

IOWA EMS TREATMENT PROTOCOLS

Table of Contents

Section 1:

Overview & Authorization ----- I-IV

Section 2:

Adult Treatment Protocols ----- 6-37

Section 3:

Pediatric Treatment Protocols ----- 39-62

Section 4:

Appendices A—KK----- 66-83

IOWA EMS TREATMENT PROTOCOLS
Section 1

Introduction ----- I
Protocol Authorization----- II
Protocol Revision ----- III
Drug List----- IV

Introduction

The purpose of protocols in the out-of-hospital setting is to assure safe and effective intervention during the out-of-hospital phase of patient care. In consideration of the unique resources, needs, population and geography of individual service programs, the physician medical director may choose to enhance or omit portions in accordance with Iowa Code, Chapter 147A. Medical directors are responsible to ensure that EMS personnel use protocols, have the training and skills required, and perform Continuous Quality Improvement (CQI) activities.

Use of skills in the out of hospital setting are limited to the EMS provider's scope of practice and EMS service program level of authorization as approved by the physician medical director. The service program medical director must determine what skills within the level of service authorization and provider scope of practice are to be included or not included for individual EMS services. **The "Iowa EMS Scope of Practice" document, adopted by reference to the administrative rules outlines skills by certification level. It is can be found in Appendix A of this document, on the Bureau of EMS website or by contacting the Bureau of EMS.**

Protocols are essential to assure education, training, and standards of care meet the needs of patients. Ongoing review and update of protocols is necessary to keep pace with interventions known to be effective in out-of-hospital care. The challenge is for all EMS providers, to keep current with the protocols so the EMS continuum of care can effectively reduce suffering, disability, death and costs from life-threatening illness and injury.

It is the intent of the Protocol Committee and the Iowa EMS Advisory Council that these protocols will serve as a standard throughout Iowa's EMS system. **Approved current protocols shall be available on all authorized service vehicles.** According to Iowa Administrative Code 641-132.9(2)(a) individual physician medical directors duties include *"developing, approving, and updating protocols to be used by service program personnel that meet or exceed the minimum standard protocols developed by the department."*

Additionally, according to 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."*

The following authorization page and any changes or revisions made by the EMS service medical director must be on file with the State EMS Field Coordinator.

Protocols Authorization

Authority:

According to Iowa Code, Chapter 147A, emergency medical personnel may only deliver emergency medical care under the direction of a physician medical director who is licensed in Iowa. The medical practice of out-of-hospital personnel is an extension of the medical director's license.

Protocols shall be approved, signed and dated by the EMS service medical director prior to implementation. Staff training must be documented & on file. Any changes must be on file with your EMS Field Coordinator. Skills must be within the level of service authorization and EMS provider scope of practice.

The Service Physician Medical Director Must Approve the Protocol In Accordance With the Authorized Level of Service

LENOX AMBULANCE SERVICE

Service Program Name

____ Ambulance ____ Non-transport

A. Level of Authorization:

- First Responder
- EMT-B
- EMT-I
- EMT-P
- EMT-P / CCT (attach protocol)
- PS
- PS / CCT (attach protocol)

B. These protocols are to be considered a standing order. Radio communications are not required prior to performing any protocol action. EMT's/Paramedics should call in for further direction or confirmation of orders whenever the situation warrants.

YES NO

C. The emergency medical care provider present with the highest level of certification (on the transporting service) shall determine, based upon patient care needs, the appropriate level of provider to attend the patient during transport.

YES NO

D. Approval of Skills and Training Level (Physician Medical Director must approve skills based on providers scope of practice & service authorization level)

- Esophageal/tracheal
double-lumen airway YES NO
- IV maintenance YES NO
- Glucose Monitor YES NO
- Epinephrine Auto-injector YES NO
- Gastric Tube Insertion YES NO
- Needle Thoracostomy YES NO
- NG Tube Insertion YES NO
- Intraosseous Infusion YES NO
- Needle Cricothyrotomy YES NO
- CPAP YES NO
- RSI (attach protocol) YES NO
- Nasotracheal Intubation YES NO
- Thrombolytics YES NO
(attach protocol)
- Assessment-based
Spinal Immobilization YES NO

I understand I am responsible for providing appropriate medical direction and overall supervision of the medical aspects of the service program and I have reviewed this document and the Iowa EMS Scope of Practice which is defined by Iowa Administrative Code 641-132.

Physician Medical Director's Name
(please print)

Physician Medical Director's Signature

Date

Protocol Revision

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.

<u>PAGE</u>	<u>PROTOCOL NAME</u>	<u>CHANGES MADE</u> (may attach copies)
8	Abdominal Pain	Advanced Care: add e) Follow pain protocol
11	Airway	Advanced Care: add e) If airway is obstructed, visualize with Magill forceps and remove obstruction if possible; f) If unable to clear airway perform needle cricothyrotomy
12	Allergic Reaction	Basic Care: Change a) to: Administer auto-injectable epinephrine 0.3 mg for signs of anaphylaxis. Advanced Care: change dose of IV epinephrine to 0.3-0.5 mg (3-5 ml)
13	Altered Mental Status	Basic Care: If patient is able to swallow, give glucose gel for blood sugar less than 60 or if patient has signs of low blood sugar and history of diabetes. Advanced Care: add f) If patient is unconscious, consider naran and/or thiamine if appropriate, per drug protocols
14	Amputated Part	Advanced Care: change f) to “Follow Pain Protocol”
17	Behavioral Emergencies	Basic Care: d) Use soft restraints only if the patient is combative and a danger to self or others. Never restrain a patient in prone position. It is recommended that Law Enforcement accompanies the patient whenever restraints are used. Advanced Care: add under d) if no IV access, give midazolam 5-10 mg IN

SERVICE NAME _____

PHYSICIAN MEDICAL DIRECTOR _____

Print Name
Signature
Date

Protocol Revision, cont.

<u>PAGE</u>	<u>PROTOCOL NAME</u>	<u>CHANGES MADE</u> (may attach copies)
18-19	Burns	Advanced Care: Remove LR and replace with NS (Same change for Pediatric Burns, pgs 47-48)
22-23	Childbirth	See attached protocol for changes.
24-25	Congestive Heart Failure	Advanced Care: add q) Consider furosemide 40-80 mg SIVP
27	Heat Illness	Advanced Care: add i) Administer IV fluids as appropriate
14	Amputated Part	Advanced Care: change f) to "Follow Pain Protocol"
17	Behavioral Emergencies	Basic Care: d) Use soft restraints only if the patient is combative and a danger to self or others. Never restrain a patient in prone position. It is recommended that Law Enforcement accompanies the patient whenever restraints are used. Advanced Care: add under d) if no IV access, give midazolam 5-10 mg IN
30	Pain Control	See attached protocol to be used instead of State protocol. Same for Ped Pain Control, pg 56
32	Seizure	Advanced Care: Remove Lorazepam and replace with midazolam 2-5 mg IV or 2 mg IN, titrated to stop seizure or until 10 mg is given.
35-37	Trauma	Chest Trauma, Advanced Care: Perform needle chest decompression if needed. (Same for Ped Chest Trauma, pg 61) Head & Neck Trauma, c) add "until full spinal immobilization has been completed." Extremity Injuries, Basic Care: add h) Splint as appropriate
44	Ped AMS	If patient can swallow, and blood sugar is below 60, or patient has signs of low blood sugar with history of diabetes, administer glucose gel.

SERVICE NAME _____

PHYSICIAN MEDICAL DIRECTOR _____
Print Name Signature Date

Authorized Drug List

Drugs listed on this page are those referenced in the protocols. Medical Directors may add, delete, and/or substitute drugs as appropriate for their service program. Additional drugs, such as those from current AHA/ACLS guidelines, may be determined and/or used by the service program medical directors based upon identified EMS system factors. Staff training must be documented & on file.

Basic	Advanced
Oxygen	Normal Saline
Aspirin	Dextrose 5% in Water
Activated Charcoal	Adenosine
Glucose Paste	Albuterol
Patient Assisted Inhaler	Amiodarone
Epi Pen	Atropine
Patient Assisted Nitroglycerin	Dextrose
	Diazepam
Individual drug protocols are attached to the patient care protocols for additional guidance when choosing an appropriate medication.	Diphenhydramine
	Dopamine
	Epinephrine
	Etomidate
	Fentanyl
<p>Paramedics may monitor / administer additional drugs during interfacility transfers if a written order is obtained. The paramedic should familiarize himself / herself with the drug prior to transport, obtain the appropriate IV drip chart, and have knowledge of the operation of the IV pump being used.</p> <p>For Critical Care Transport, Lenox Ambulance will utilize equipment from the sending hospital, with arrangements made prior to accepting the transport.</p>	Flumazenil
	Furosemide
	Glucagon
	Ipratropium
	Lactated Ringers Solution
	Lidocaine
	Magnesium Sulfate
	Metoprolol
	Midazolam
	Morphine Sulfate
	Naloxone
	Nitroglycerin
	Odansetron
	Oxytocin
	Sodium Bicarbonate
Succinylcholine	
Thiamine	
Vasopressin	

SERVICE NAME _____

PHYSICIAN MEDICAL DIRECTOR _____

Signature

Date

IOWA EMS TREATMENT PROTOCOLS

Section 2

Adult Treatment Protocols

Initial Patient Care Protocol-----	6
Abdominal Pain-----	8
Acute Coronary Syndrome-----	9
Airway-----	11
Allergic Reaction-----	12
Altered Mental Status-----	13
Amputated Part-----	14
Apparent Death-----	15
Asthma-----	16
Behavioral Emergencies-----	17
Burns-----	18
Cardiac Arrest-----	21
Childbirth-----	22
Congestive Heart Failure-----	24
Frostbite-----	26
Heat Illness-----	27
Hypothermia-----	28
Nausea & Vomiting-----	29
Pain Control-----	30
Poisoning-----	31
Seizure-----	32
Sexual Assault-----	33
Stroke-----	34
Trauma-----	35

Initial Patient Care Protocol

1. Scene Size Up
 - a) Review the dispatch information
 - b) As you approach the scene consider safety for yourself and your patient
 - c) Observe universal precautions
 - d) After determining the number and location of patients, consider the need for additional resources
 - e) Determine mechanism of injury and/or nature of illness
 - f) Reassess the situation often

2. Primary Survey
 - a) Obtain general impression of patient, chief complaint, and priority problems
 - b) Determine responsiveness
 - c) Assess airway
 - d) Assess breathing
 - e) Assess circulation

3. Initial Interventions
 - a) Treat airway/breathing problems
 - b) Treat circulation problems
 - c) Establish IV/IO access if indicated
 - d) Apply Cardiac Monitor if indicated
 - e) Apply Pulse/Ox or EtCO₂ monitor if available and indicated
 - f) Treat pain or nausea if present

4. Secondary Survey
 - a) Perform secondary assessment after initial interventions are completed
 - b) Address problems identified in the secondary survey utilizing the appropriate protocol(s)

5. Ongoing Assessment
 - a) Repeated evaluation of patient
 - Vitals every 5 minutes for unstable patients
 - Vitals every 15 minutes for stable patients
 - b) Assess effect of interventions

6. Transport/Contact Medical Control
 - a) Patients should be transported as soon as feasible to an appropriate medical facility. Immediate transport with treatment en route is recommended for patients with significant trauma or unstable airways

Initial Patient Care Protocol (continued)

- b) Tier with an appropriate service if level of care indicates or assistance is needed and can be accomplished in a timely manner
- c) Contact medical direction as soon as feasible in accordance with local protocol for further orders
- d) For seriously injured or critically ill patients, give a brief initial report from the scene when possible, with a more detailed report given to medical direction while en route

Abdominal Pain (non-traumatic)

1. Follow Initial Care Protocol for all Patients

Basic Care Guidelines

- a) NPO

Advanced Care Guidelines

- b) Consider a fluid bolus of 500 of NS if orthostatic.
- c) Follow Pain Protocol
- d) Consider nausea control

Acute Coronary Syndrome

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 or pulse oximetry of less than 94% titrate oxygen to maintain a saturation of 94% or higher.
- b) If capability exists obtain a 12 Lead EKG and if possible 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 (4) 81 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 nitro only) and blood pressure is greater than 100 systolic, give one dose. If patient is taking erectile dysfunction drugs such as Viagra, contact medical direction prior to giving Nitroglycerin
- g) Repeat one nitro dose in 3-5 minutes if pain continues, blood pressure is greater than 100 systolic and authorized by medical direction up to a maximum of three doses
- h) If blood pressure less than 100 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 H (Reperfusion Strategies) as ordered by medical control.

Advanced Care Guidelines

- j) If capability exists obtain a 12-Lead EKG and if possible transmit to the receiving facility and/or medical control for interpretation as soon as possible

Acute Coronary Syndrome (Continued)

- k) Establish IV access at TKO rate unless otherwise ordered or indicated
- l) Monitor EKG and treat dysrhythmias following appropriate protocols approved by the medical director, referencing AHA guidelines.
- m) Administer nitroglycerin (tab or spray) 0.4 mg sublingually if blood pressure greater than 100 systolic for symptoms of chest pain or atypical cardiac pain. Repeat a dose in 5 minutes if pain continues and blood pressure is greater than 100 systolic. Up to a maximum of three doses should be tried before administering Morphine
- n) If pain continues after administration of Nitroglycerin and systolic blood pressure remains above 100mmHg administer Morphine Sulfate following the AHA STEMI guidelines:
 - STEMI – Morphine 2-4 mg IV may repeat 2-8 mg IV every 5 minutes
Titrated to pain relief and vitals remain stable
OR
 - UA/NSTEMI – Morphine 1-5 mg IV given once

Airway

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

Breathing spontaneous on initial assessment and adequate ventilation present

- a) maintain oxygenation with cannula or mask if oxygen saturations are below 94% titrate to 94% - 96%

Breathing spontaneous on initial assessment without adequate ventilation present

- a) Check airway for obstruction and clear if needed
- b) After airway clear, assist ventilation with an appropriate adjunct and oxygen
- c) If adequate ventilation is not maintained proceed to an advanced airway

Not breathing on initial assessment

- a) Open airway with head tilt chin lift. If successful assist ventilations at an adequate rate & depth and reassess
- b) If head tilt chin lift not successful check airway for obstruction and clear if needed
- c) After airway clear, assist ventilation
- d) If adequate ventilation is not maintained proceed to an advanced airway

Advanced Care Guidelines

If airway is obstructed, visualize with Magill forceps and laryngoscope and remove obstruction if possible.

If unable to clear the airway perform needle cricothyrotomy as appropriate.

Allergic Reaction

1) Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Administer auto-injectable Epinephrine (0.3 mg) for signs of anaphylaxis.

Advanced Care Guidelines

- b) Administer Epinephrine 1:1000 0.3-0.5 cc IM every 5 minutes up to three doses. For severe cases of Anaphylaxis consider IV/IO administration of (0.3 - 0.5 mg (3 – 5 ml) of Epinephrine 1:10,000
- c) Administer diphenhydramine 25 - 50mg IV
- d) Albuterol 2.5mg in 3cc NS by nebulizer if respiratory distress
- e) Consider early intubation if severe anaphylaxis

Altered Mental Status

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Obtain blood glucose
- b) If patient is conscious and able to swallow, and blood sugar is less than 60 mg/dl, administer 1 tube of oral glucose.
- c) If unable to obtain blood glucose and patient has history of diabetes, is conscious and able to swallow, administer 1 tube of oral glucose.

Advanced Care Guidelines

- d) If blood sugar less than 60 mg/dl give D50 12.5 - 25 grams IV
- e) If no vascular access give Glucagon 1 mg IM
- f) If no response with glucose consider Narcan 1 mg IV. If no response may repeat in 3 minutes
- g) Consider Thiamine 100 mg IV / IM for patients who are malnourished, have history of alcoholism, or prolonged transport time.
- h) If no response, reassess ventilation and consider 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
- d) Place the plastic bag with the amputated part in a water and ice mixture
- 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

- i) Follow pain protocol.

Apparent Death

1. Follow Initial Patient Care Protocol

Apparent death indications are as follows:

- Signs of trauma are conclusively incompatible with life
- Physical decomposition of the body
- Rigor Mortis and/or Dependent Lividity

If apparent death is confirmed, continue as follows:

Basic Care Guidelines

- a) The county Medical Examiner and law enforcement shall be contacted
- b) Where possible contact Iowa Donor Network at 800-831-4131. See Protocol Appendix **K**
- 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 reason no resuscitation was initiated
- f) Preserve the crime scene if present
- g) In all other circumstances (except where “NO CPR/DNR” protocol applies; see appendix B) full resuscitation must be initiated

Advanced Care Guidelines

- h) May use cardiac monitor to document asystole

Asthma

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

If patient has a physician prescribed, hand-held metered dose inhaler

- a) Assist patient in administering a single dose if they have not done so already
- b) Reassess patient and assist with second dose if necessary per medical direction

Advanced Care Guidelines

- c) Nebulizer treatment with Albuterol 2.5 mg in 3.0 cc NS, repeat as necessary.
- d) Consider adding Ipratropium 0.5 mg to first dose of Albuterol in nebulizer.
- e) Consider Epinephrine 0.3 - 0.5 mg of a 1:1,000 solution IM. Repeat in 12-15 min. per medical direction or IV using 1:10,000 solution.
- f) For serious signs/symptoms apply CPAP, if available

Behavioral Emergencies

1. Follow Initial Patient Care Protocol

- a) If there is evidence of immediate danger, protect yourself and others by summoning law enforcement to help ensure safety

Basic Care Guidelines

- b) Consider medical or traumatic causes of behavior problems
- c) Keep environment calm
- d) Use soft restraints **ONLY** if the patient is physically combative and a threat to self or EMS. **NEVER** restrain the patient in a prone position. Law Enforcement should accompany the restrained patient.

Advanced Care Guidelines

- e) For severe anxiety consider a benzodiazepine such as Diazepam 2mg IV every 5 minutes up to 10 mg maximum
OR
May give 5-10mg Diazepam IM
OR
Versed, 2-5 mg IM or IN

Burns

1. Follow Initial Patient Care Protocol

Thermal Burns

Basic Care Guidelines

- a) Stop the burning process, initially with water or saline
- b) Estimate percent of body surface area injured and depth of injury
- c) If wound is less than 10 % Body Surface Area cool down burn with Normal Saline
- d) Remove smoldering clothing, jewelry & expose area
- e) Continually monitor the airway for evidence of obstruction
- f) Cover the burned area with plastic wrap or a dry sterile dressing
- g) Do not break blisters
- h) Do not use any type of ointment, lotion or antiseptic
- i) Keep patient warm

Advanced Care Guidelines

- a) Establish an IV of NS. Using the Parkland Burn Formula: 4 mls x total body surface area sustaining 2nd/3rd degree burns x person's weight in kilograms. Infuse half of this volume over the first 8 hours from the time of the burn, with the remainder infused over the following 16 hrs. ***Quick Calculation for the first hour:*** Patient's weight in kilograms x 20 cc = volume for the first hours. The total volume can be calculated when there is time.
- b) Follow Pain Protocol
- c) Transport to the most appropriate medical facility

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) Immediately begin to flush with large amounts of water
- c) Continue flushing the contaminated area when en route to the receiving facility
- d) Do not contaminate uninjured areas while flushing
- e) Attempt to identify contaminant
- f) Transport to the most appropriate medical facility

Burns (continued)

Chemical Burns (continued)

- g) Estimate percent of body surface area injured and estimate the depth of burn as superficial, partial thickness or full thickness

Advanced Care Guidelines

- d) Establish an IV of NS. Using the Parkland Burn Formula: 4 mls x total body surface area sustaining 2nd/3rd degree burns x person's weight in kilograms. Infuse half of this volume over the first 8 hours from the time of the burn, with the remainder infused over the following 16 hrs. ***Quick Calculation for the first hour:*** Patient's weight in kilograms x 20 cc = volume for the first hours. The total volume can be calculated when there is time.
- h) Refer to Pain Control protocol

Toxin in Eye

Basic Care Guidelines

- a) Flood eye(s) with lukewarm water and have patient blink frequently during irrigation. Use caution to not contaminate other body areas
- b) Attempt to identify contaminant
- c) Transport to the most appropriate medical facility

Advanced Care Guidelines

- d) Establish a large bore IV if indicated and infuse as patient condition warrants
- e) Follow Pain Protocol

Burns (continued)

Electrical Burns

Basic Care Guidelines

- a) Treat soft tissue injuries associated with the burn with dry dressing
- b) Treat for shock if indicated
- c) Transport to the most appropriate medical facility
- d) Estimate percent of body surface area injured and estimate the depth of burn as superficial, partial thickness or full thickness

Advanced Care Guidelines

- e) Establish an IV of NS. Using the Parkland Burn Formula: 4 mls x total body surface area sustaining 2nd/3rd degree burns x person's weight in kilograms. Infuse half of this volume over the first 8 hours from the time of the burn, with the remainder infused over the following 16 hrs. ***Quick Calculation for the first hour:*** Patient's weight in kilograms x 20 cc = volume for the first hours. The total volume can be calculated when there is time.
- f) Follow Pain Protocol

Cardiac Arrest

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Address airway per airway protocol
- b) Ventilate with 100% O₂
- c) Initiate CPR, per current guidelines.
- d) Utilize AED per current guidelines

Advanced Care Guidelines

- e) All levels of providers should perform emergency cardiac care in accordance with protocols approved by the medical director, referencing AHA guidelines

Childbirth

1. Follow Initial Patient Care Protocol

Normal Delivery

Basic Care Guidelines

- a) If delivery is imminent with crowning, commit to delivery on site and contact medical control
- b) 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

Post Delivery

Basic Care Guidelines

- a) Ensure open and patent airway. After the infant's head is born, suction the mouth, then the nose. Repeat as needed after the birth is complete
- b) Stimulate the newborn to breathe. Continue to stimulate newborn if not breathing by flicking soles of feet, or rubbing infants back.
- c) Clamp the cord in two places starting approximately 4-6 inches from the infant, and cut between the clamps.
- d) If the newborn does not begin to breathe or continues to have breathing difficulty after 30 seconds, apply blow-by oxygen and continue to stimulate the newborn.
- e) If the newborn does not respond to oxygen after 30 seconds, ventilate at a rate of 40 breaths per minute with 100% oxygen. Reassess after 30 seconds.
- f) If the heart rate is absent or remains <60 BPM after 30 seconds of adequate assisted ventilation, second rescuer should start chest compression with 2 thumbs and encircling fingers at recommended AHA rate and depth
- g) Prevent/minimize heat loss to maintain normothermia:
 - Dry the infant thoroughly, removing the wet linen immediately after drying
 - Wrap the newborn in blankets and cover the head in order to minimize heat loss

- h) Repeat suctioning if necessary, and continue to monitor and support baby's respiratory/circulatory status
- i) Place sterile pad over mother's vaginal opening, observe and treat for shock as needed.
- j) Massage the mother's lower abdomen firmly if heavy bleeding is present.

Advanced Care Guidelines

MOTHER:

May establish IV access with NS and give fluid bolus.

If heavy bleeding is present, consider administration of Oxytocin 10 units in 1000 ml of NS and infused by standing orders or medical direction.

NEWBORN:

Follow current AHA guidelines.

Child Birth (continued)

Abnormal Deliveries:

Basic Care Guidelines

Breech delivery: (buttocks presentation)

- a) Allow 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
- e) Do not remove your hand until relieved by advanced EMS or hospital staff

Limb presentation

- a) Place mother in head down position and administer high flow oxygen.

Prolapsed Cord

- a) Place mother in head down position and administer high flow oxygen
- b) Insert gloved hand into the vagina, and gently push up on the baby's head to take pressure off of the cord.
- c) Do not remove your hand until relieved by advanced EMS or hospital staff

Advanced Care Guidelines

No additional guidelines.

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) Administer oxygen, titrated to oxygen saturations to 94-96%
- 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 the patient has been prescribed nitroglycerin (patient's nitro only) and blood pressure is greater than 100 systolic, give one dose
- g) Repeat dose in 3-5 minutes if symptoms continue and vitals remain stable, up to a maximum of three doses
- h) Reassess patient and vital signs after each dose
- i) Further assess the patient and evaluate possible causes (unless other treatment priorities exist)

Advanced Care Guidelines

- j) If not already performed obtain a 12-lead EKG and if possible transmit it to the receiving facility and/or medical control
- k) Establish IV access at TKO rate unless otherwise ordered or indicated
- l) Be prepared to intubate patient
- m) Monitor EKG and treat dysrhythmias following the appropriate protocol(s)

Congestive Heart Failure (continued)

Advanced Care Guidelines (continued)

- n) Refer to Appendix G (Reperfusion Strategies)
- o) If capability exists, apply CPAP
- p) Administer Nitroglycerin 0.4 mg sublingually if blood pressure greater than 100 systolic. Repeat as needed
- q) Consider Furosemide 40-80 mg slow IVP.

Frostbite

1. 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) Follow Pain Protocol

Heat Illness

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) Administer IV fluids as appropriate.

Hypothermia

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Remove wet clothing
- b) If able, check core temperature
- c) If temperature less than 95 degrees F hypothermia is confirmed
- d) Handle patient very gently
- e) Cover patient with blankets

Advanced Care Guidelines

- f) Administer warm IV fluids if available. Do not administer cold fluids
- g) Follow current guidelines recommended by AHA.

Nausea & Vomiting

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Keep patient NPO

Advanced Care Guidelines

- b) Consider fluid bolus if evidence of hypovolemia and lung sounds are clear
- c) If patient nauseated or is vomiting consider anti-emetic medication such as Ondansetron 4 mg IV.
- d) Consider intubating patients with altered mental status who are vomiting and can't protect their airway

Pain Control

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

a) First

Place the patient in a position of comfort.

Advanced Care Guidelines

If the patient has significant pain, do not have a decreased level of consciousness, are hemodynamically stable, and with oxygen saturation $\geq 92\%$. Administer an analgesic titrated to patient comfort. Example:

- Fentanyl 25-50 mcg IV, repeated in 5 min
- OR**
- Fentanyl 25-50 mcg IV every 5 minutes as needed to a maximum of 100 mcg

c) Give Narcan 1 mg IV for respiratory depression from narcotic; repeat x 1 if needed

d) For severe pain consider anxiolysis.

- Midazolam 0.5-2.5 mg IV as needed to a maximum of 5 mg every 5 min
- OR**
- Diazepam 2-5 mg IV / IM* repeated as needed to a maximum of 10 mg
- OR**
- Lorazepam 2mg IV, repeated every 5-10 min as needed to a maximum of 6 mg. Use 4 mg if patient is elderly.

e) Monitor

The patient must have vital signs monitored and be monitored closely, if at any time there is a decreased level of consciousness, decrease in oxygen saturation below 92% , or blood pressure drops to 100 mmHg or less, administration of narcotic medication must stop

Poisoning

1. Follow Initial Patient Care Protocol
2. Identify contaminate and call Poison Control and follow directions given to provide care: 1-800-222-1222
3. Contact Medical Direction as soon as possible with information given by Poison Control and care given

Basic Care Guidelines

Ingested poisons

- a) Identify and estimate amount of substance ingested
- b) Administer activated charcoal if directed by Poison Control.

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
- c) Try to identify source of injected poison

Advanced Care Guidelines

For drug specific overdoses of benzodiazepines administer Flumazenil per drug protocol.
For drug specific overdoses of narcotics administer Naloxone per drug protocol.

Seizure

1. Follow Initial Patient Care Protocol

Active seizure

Basic Care Guidelines

- a) Protect airway
- b) Check blood sugar and treat hypoglycemia if present

Advanced Care Guidelines

- c) Administer Diazepam in 2 mg doses IV push until seizure stops or 10 mg is given
OR
Midazolam in 2.5 mg doses IV push, until the seizure stops or until 10 mg is given
- d) Check blood sugar and give 50 ml Dextrose 50% if appropriate.

OTHER ROUTES OF DRUG ADMINISTRATION ARE ACCEPTABLE.
FOLLOW DRUG PROTOCOLS.

Post seizure

Basic Care Guidelines

- a) Protect airway
- b) Check blood sugar and treat hypoglycemia if present

Advanced Care Guidelines

- c) Consider Thiamine 100mg IM
- d) Treat hypoglycemia appropriately if present

Sexual Assault

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Identify yourself to the patient, assure patient that they are safe, and are in no further danger
- b) Do not burden patient with questions about the details of the crime; you are there to provide emergency medical care
- c) Be alert to immediate scene and document what you see. Touch only what you need to touch at the scene
- d) Do not disturb any evidence unless necessary for treatment of patient. (If necessary to disturb evidence, document why and how it was disturbed)
- e) Preserve evidence; such as clothing you may have had to remove for treatment, and make sure that it is never left unattended at any time, to preserve "chain of evidence"
- f) Contact local law enforcement if not present
- g) Treat other injuries as indicated
- h) Treat for shock if indicated

Stroke

A. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Perform a “FAST” Cincinnati Prehospital Stroke Scale - checking facial droop, arm drift, speech, and time of onset. Notify receiving facility as soon as possible if stroke is suspected
- b) If Stroke Screening is positive expedite transport to the hospital
- c) Check blood glucose

Advanced Care Guidelines

- d) If blood sugar less than 60 give D50 12.5 - 25 grams IV or Glucagon 1 mg IM if no IV access available
- e) Monitor patient's level of consciousness and blood pressure every five (5) minutes, and keep patient as calm as possible
- f) Follow AHA guidelines for Acute Stroke

Trauma

1. Follow Initial Patient Protocol for all patients.
2. Follow the Out-of-Hospital Trauma Triage Destination Decision Protocol for the identification of time critical injuries, method of transport and destination decision for treatment of those injuries

Basic Care Guidelines

- a) Follow Shock Protocol if shock is present.
- b) Hemorrhage Control Protocol
 - Control bleeding with direct pressure. Large gaping wounds may need application of a bulky sterile gauze dressing and direct pressure by hand
 - If unable to control hemorrhage with direct pressure consider application of a tourniquet

Advanced Care Guidelines

- c) Establish IV and infuse fluids to maintain a systolic pressure of 90 – 100 mmHg for shock.
- d) Consider a second IV if severe trauma
- e) Follow Pain Protocol
- f) Monitor EKG and treat dysrhythmias if indicated following the appropriate protocol

Chest Trauma

Basic Care Guidelines

- a) Seal open chest wounds immediately. Use occlusive dressing taped down. 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

Provide needle chest decompression if appropriate.

Trauma (continued)

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

Head and Neck Trauma

Basic Care Guidelines

- a. Establish and maintain manual spinal immobilization
- b. Place the head in a neutral in-line position unless the patient complains of pain or the head does not easily move into this position
- c. Apply cervical collar and maintain manual stabilization until patient is immobilized on a long spineboard.
- d. 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 prior to immobilization on a spineboard.
- e. 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
- f. Reassess vitals and Glasgow Coma Score (GCS) frequently

Advanced Care Guidelines

- g. Consider intubation if GCS is less than 8 or airway can't be maintained
- h. If patient is intubated or has an airway such as Combitube, King, LMA P_{ET}CO₂ levels should be continually monitored and maintained at 33 – 43 mmHg if available

Trauma (continued)

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
- h) Splint appropriately.

IOWA EMS TREATMENT PROTOCOLS

Section 3

Pediatric Treatment Protocols

Pediatric Initial Patient Care Protocol -----	39
Pediatric Airway -----	41
Pediatric Allergic Reaction -----	43
Pediatric Altered Mental Status -----	44
Pediatric Apparent Death -----	45
Pediatric Asthma -----	46
Pediatric Burns -----	47
Pediatric Cardiac Arrest -----	50
Pediatric Nausea & Vomiting -----	51
Pediatric Near Drowning -----	52
Pediatric Newborn Resuscitation -----	53
Pediatric Pain Control -----	56
Pediatric Poisoning -----	57
Pediatric Seizures -----	58
Pediatric Shock -----	59
Pediatric Suspected Child Abuse -----	60
Pediatric Trauma -----	61

Pediatric Initial Care Protocol

1. Scene Size Up

- a) Review the dispatch information
- b) As you approach the scene, be sure to consider safety for yourself and your patient
- c) Observe universal precautions
- d) After determining the number and location of patients, consider the need for additional resources
- e) Determine mechanism of injury and/or nature of illness
- f) Reassess the situation often

2. Primary Survey

- a) Obtain general impression of patient, chief complaint, and priority problems
- b) Determine responsiveness
- c) Assess airway
- d) Assess breathing
- e) Assess circulation
- f) Maintain cervical stabilization/immobilization if indicated

3. Initial Interventions

- a) Treat airway/breathing problems
- b) Treat circulation problems
- c) Establish IV access if indicated
- d) Treat pain or nausea
- e) Apply cardiac monitor

4. Secondary Survey

- a) Perform secondary assessment after initial interventions are completed
- b) Address problems identified in the secondary survey utilizing the appropriate protocol(s)
- c) Assess pain

5. Ongoing Assessment

- a) Repeated evaluation of patient
 - Vitals every 5 minutes for unstable patient
 - Vitals every 15 minutes for stable patients
- b) Assess effect of interventions

Pediatric Initial Care Protocol (continued)

6. Transport/Contact Medical Control
 - a) Patients should be transported as soon as feasible to an appropriate medical facility. Immediate transport with treatment enroute is recommended for patients with significant trauma or unstable airways
 - b) Tier with an appropriate service if level of care indicates or assistance is needed and can be accomplished in a timely manner
 - c) Contact medical direction as soon as feasible in accordance with local protocol for further orders
 - d) For seriously injured or critically ill patients, give a brief initial report from the scene when possible, with a more detailed report given to medical direction while enroute

Pediatric Airway

1. Follow Initial Patient Care Protocol

Breathing spontaneous on initial assessment with adequate ventilation

Basic Care Guidelines

- a) Assess oxygenation with oximeter if available
- b) Maintain oxygenation with cannula, mask or blow-by

Breathing without adequate ventilation or not breathing

Basic Care Guidelines

- a) Open the airway
- b) Attempt assisted ventilation using an appropriate adjunct with high-flow 100% oxygen. If unable to ventilate first reposition airway and again attempt to ventilate
- c) If ventilation still unsuccessful check airway for obstruction and attempt to dislodge with age appropriate techniques

Advanced Care Guidelines

- d) If unsuccessful establish direct view of object and attempt to remove it with Magill forceps

If obstruction cleared

Basic Care Guidelines

- a) Assist ventilation and provide oxygen

Advanced Care Guidelines

- b) If adequate ventilation is NOT maintained proceed to an advanced airway as appropriate for patient size

Pediatric Airway (continued)

If obstruction not cleared

Advanced Care Guidelines

- c) Attempt endotracheal intubation and try to ventilate the patient
- d) If endotracheal intubation is not successful, perform needle cricothyrotomy and needle insufflation

Pediatric Allergic Reaction

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Assess airway via Airway Protocol.
- b) Administer supplemental oxygen
- c) If signs of anaphylaxis are present, administer auto-injectable Epinephrine. Use pediatric (0.15 mg) for children less than 66 lbs. (30 kg) and adult dose (0.3 mg) for children over 66 lbs (30 kg.)

Advanced Care Guidelines

- d) Administer Epinephrine 1:1,000 0.01 mg/ kg IM
- e) Establish IV access
- f) Administer diphenhydramine at 1.0 mg/kg (maximum individual dose 50 mg) via intravenous route or deep intramuscular injection
- g) Administer Epinephrine 1:10,000 IV for profound shock at 0.01 mg per kg
- h) Consider Albuterol 2.5mg in 3cc NS by nebulizer if respiratory distress

Pediatric Altered Mental Status

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Follow Airway Protocol to ensure adequate ventilation.
- b) Obtain blood glucose
- c) Patient hypoglycemic and conscious- give oral Glucose for children over 2 years of age.

Advanced Care Guidelines

- d) Establish IV / IO access

If Hypoglycemic

- e) Patient unconscious or conscious but unable to swallow, give Dextrose slowly IV as follows:
 - Infants less than 1 month: dilute 1 ml/kg (0.5 g/kg) D50 with 4 parts NS
 - 1 month – 8 yrs: dilute 1 ml/kg (0.5 g/kg) D50 with equal amount of NS
 - >8 yrs: Use D50, 1-2 ml/kg (0.5-1.0 g/kg)
- f) Patient unconscious and no IV access; administer Glucagon .025 mg/kg up to 1 mg maximum IM
- g) Monitor cardiac rhythm
- h) If no improvement in level of consciousness after glucose administration give Narcan 0.1 mg/kg up to maximum dose of 2.0 mg per dose
- i) If there is evidence of shock or a history of dehydration, administer a fluid bolus of normal saline at 20 ml/kg set to maximum flow rate
- j) Reassess patient, if signs of shock persist, bolus may be repeated at the same dose up to two times for a maximum total of 60 ml/kg

Pediatric Apparent Death

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

Apparent death indications are as follows:

- Signs of trauma are conclusively incompatible with life.
- Physical decomposition of the body.
- Rigor Mortis and/or Dependent Lividity

If apparent death is confirmed, then continue as follows:

- a) The county Medical Examiner and law enforcement shall be contacted.
- b) Where possible contact Iowa Donor Network at 800-831-4131.
See protocol appendix J
- 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 reason no resuscitation was initiated
- f) Preserve the crime scene if present
- g) In all other circumstances (except where “NO CPR/DNR” protocol applies) full resuscitation must be initiated

Advanced Care Guidelines

- h) Use cardiac monitor to document asystole

Pediatric Asthma

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Use Airway Protocol to evaluate the airway and adequacy of ventilation
- b) If patient has a physician prescribed, hand-held metered dose inhaler, contact medical direction for approval to give inhaler treatment
- c) Reassess patient and repeat second dose if necessary per medical direction

Advanced Care Guidelines

- d) Administer nebulizer treatment with Albuterol 2.5.mg above
- e) Administer Epinephrine 1:1,000 0.01 mg/kg IM
- f) Administer Epinephrine 1:10,000 IV for profound distress at 0.01 mg per kg

Pediatric Burns

1. Follow Initial Patient Care Protocol

Thermal burns

Basic Care Guidelines

- a) Stop the burning process, initially with water or saline
- b) Remove smoldering clothing and jewelry
- c) Continually monitor the airway for evidence of obstruction
- d) Prevent further contamination of wounds
- e) Cover the burned area with a dry sterile dressing
- f) Do not use any type of ointment, lotion or antiseptic
- g) Do not break blisters
- h) Transport to the most appropriate medical facility
- i) Estimate percent of body surface area injured and estimate the depth of burn as superficial, partial thickness or full thickness

Advanced Care Guidelines

- j) Establish an IV of LR. Using the Parkland Burn Formula: 4 mls x total body surface area sustaining 2nd/3rd/4th degree burns x person's weight in kilograms. Infuse half of this volume over the first 8 hours from the time of the burn, with the remainder infused over the following 16 hrs. **Quick Calculation for the first hour:** Patient's weight in kilograms x 20 cc = volume for the first hours. The total volume can be calculated when there is time.
- k) Follow Pain Protocol

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) Immediately begin to flush with large amounts of water. Continue flushing the contaminated area when en route to the receiving facility
- c) Do not contaminate uninjured areas while flushing
- d) Attempt to identify contaminant
- e) Transport to the most appropriate medical facility
- f) Estimate percent of body surface area injured and estimate the depth of burn as superficial, partial thickness or full thickness

Pediatric Burns (continued)

Chemical burns (continued)

Advanced Care Guidelines

- g) Establish an IV of LR. Using the Parkland Burn Formula: 4 mls x total body surface area sustaining 2nd/3rd/4th degree burns x person's weight in kilograms. Infuse half of this volume over the first 8 hours from the time of the burn, with the remainder infused over the following 16 hrs. **Quick Calculation for the first hour:** Patient's weight in kilograms x 20 cc = volume for the first hours. The total volume can be calculated when there is time.
- h) Follow Pain Protocol

Toxin in eye

Basic Care Guidelines

- a) Flood eye(s) with lukewarm water and have patient blink frequently during irrigation. Use caution to not contaminate other body areas
- b) Continue irrigation until advanced personnel take over
- c) Attempt to identify contaminant
- d) Transport to the most appropriate medical facility

Advanced Care Guidelines

- e) Establish a large bore IV if indicated and infuse as patient condition warrants
- f) Treat pain per pain control protocol

Electrical burns

Basic Care Guidelines

- a) Treat soft tissue injuries associated with the burn with dry dressing
- b) Treat for shock if indicated
- c) Transport to the most appropriate medical facility
- d) Estimate percent of body surface area injured and estimate the depth of burn as superficial, partial thickness or full thickness

Pediatric Burns (continued)

Electrical burns (continued)

Advanced Care Guidelines

- i) Establish an IV of LR. Using the Parkland Burn Formula: 4 mls x total body surface area sustaining 2nd/3rd/4th degree burns x person's weight in kilograms. Infuse half of this volume over the first 8 hours from the time of the burn, with the remainder infused over the following 16 hrs. **Quick Calculation for the first hour:** Patient's weight in kilograms x 20 cc = volume for the first hours. The total volume can be calculated when there is time.
- j) Follow Pain Protocol

Pediatric Cardiac Arrest

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Address airway per Airway Protocol.
- b) Ventilate with 100% O₂
- c) Initiate CPR per current guidelines
- d) Apply AED

Advanced Care Guidelines

- e) Obtain IV or IO access
- f) Monitor Cardiac Rhythm and treat dysrhythmia(s)
- g) All levels of providers should perform emergency cardiac care in accordance with protocols approved by the medical director, referencing AHA guidelines

Pediatric Nausea & Vomiting

1. Follow Initial Patient Care Protocol

Advanced Care Guidelines

- a) Initiate IV access
- b) Consider fluid bolus if evidence of hypovolemia
- c) If patient nauseated or is vomiting administer anti-emetic medication such as Ondansetron 0.1 mg/kg up to 4 mg maximum
- d) Consider intubating patients with altered mental status who are vomiting and can't protect their airway

Pediatric Near 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 child in a position of comfort and administer high flow, 100% concentration oxygen as necessary. Use a nonrebreather mask or blow-by as tolerated
- 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 child only as necessary to perform further assessments. Maintain the child's body temperature throughout the examination

Pediatric Near Drowning (continued)

- n) If the child's condition is stable, perform focused history and detailed physical examination on the scene, then initiate transport

Advanced Care Guidelines

- o) If abdominal distention arises, consider placing a nasogastric tube to decompress the stomach if available
- p) If the airway cannot be maintained by other means, including attempts at assisted ventilation, or if prolonged assisted ventilation is anticipated
- q) Perform sedatives and paralytic agents, to aid with intubation as permitted by medical direction. Confirm placement of endotracheal tube using clinical assessment and end-tidal CO₂ monitoring as per medical direction
- r) Initiate cardiac monitoring and determine rhythm. Consult the appropriate protocol for treatment of specific dysrhythmias. Refer to AHA guidelines
- s) Obtain vascular access. Administer normal saline at a sufficient rate to keep the vein open
- t) If the child's condition is critical or unstable, initiate transport as quickly as possible. Perform focused history and detailed physical examination en route to the hospital if patient status and management of resources permit

Newborn Resuscitation & Care

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Suction the airway using a bulb syringe as soon as the head is delivered and before delivery of the body. Suction the mouth first, then the nasopharynx.
- b) Once the body is fully delivered, dry the baby, replace wet towels with dry ones, and wrap the baby in a thermal blanket or dry towel. Cover the scalp to preserve warmth
- c) Open and position the airway. Suction the airway again using a bulb syringe. Suction the mouth first, then the nasopharynx.
- d) Assess breathing and adequacy of ventilation
- e) If ventilation is inadequate, stimulate by gently rubbing the back and flicking the soles of the feet
- f) If ventilation is still inadequate after brief stimulation, begin assisted ventilation at 40 to 60 breaths per minute using a bag-valve-mask device with high-flow 100% concentration oxygen
- g) If ventilation is adequate and the infant displays central cyanosis, administer high-flow, 100% concentration oxygen via blow-by. Hold the tubing 1 to 1-1/2 inches from the mouth and nose and cup a hand around the end of the tubing to help direct the oxygen flow toward the face
- h) If the heart rate is slower than 60 beats per minute after 30 seconds of assisted ventilation with high-flow, 100% concentration oxygen, initiate the following actions:
 - Continue assisted ventilation.
 - Begin chest compressions at a combined rate of 120/minute (three compressions to each ventilation)

Newborn Resuscitation & Care (continued)

Advanced Care Guidelines

- i) If there is no improvement in heart rate after 30 seconds. Perform endotracheal intubation
- j) If there is no improvement in heart rate after intubation and ventilation, administer 1:10,000 Epinephrine solution at 0.01 mg/kg (maximum Individual dose 1.0 mg) via endotracheal tube, or establish vascular access and administer the same dose. In the neonate, vascular access may be obtained intraosseously, intravenously, or through the umbilical vein (if available). Repeat Epinephrine at the same dose every 3 to 5 minutes as needed. Initiate transport. Reassess heart rate and respirations en route.

If the heart rate is between 60 and 80 beats per minute, initiate the following actions:

- Continue assisted ventilation with high-flow, 100% concentration oxygen. If there is no improvement in heart rate after 30 seconds, initiate management sequence described in step H above, beginning with chest compressions.
- Initiate transport. Reassess heart rate and respirations en route

If the heart rate is between 80 and 100 beats per minute, initiate the following actions:

- Continue assisted ventilation with high-flow, 100% concentration oxygen. Stimulate as previously described
- Initiate transport. Reassess heart rate after 15 to 30 seconds

If the heart rate is faster than 100 beats per minute, initiate the following actions:

- Assess skin color. If central cyanosis is still present, continue blow by oxygen. Initiate transport. Reassess heart rate and respirations en route

If thick meconium is present

- Initiate endotracheal intubation before the infant takes a first breath. Suction the airway using an appropriate suction adapter while withdrawing the endotracheal tube. Repeat this procedure until the endotracheal tube is clear of meconium. If the infant's heart rate slows, discontinue suctioning immediately and provide ventilation until the infant recovers. Note: If the infant is already breathing or crying, this step may be omitted

Pediatric Pain Control

1. Follow Initial Patient Care Protocol
2. First attempt to manage all painful conditions with basic care

Basic Care Guidelines

- a) Splint extremity injuries
- b) Place the patient in a position of comfort

Advanced Care Guidelines

- c) For patients that have significant pain, and do not have a decreased level of consciousness, and who are hemodynamically stable, and with oxygen saturations above 94% administer pain medication. Examples:
 - Morphine 0.1 mg/kg (maximum individual dose 10 mg) via intravenous or subcutaneous route
 - OR**
 - Fentanyl 1.0 mcg/kg (maximum individual dose 100 mcg) via intravenous route
- d) Monitor ECG and O2 saturations
- e) The patient must have vital signs taken prior to each dose and be monitored closely. Administration of narcotic medication must stop if at any time there is a
 - decreased level of consciousness,
 - decrease in oxygen saturation below 92%
 - blood pressure drops to 100 mmHg or less

After drug administration, reassess the patient using the appropriate pain scale

Pediatric Poisoning

1. Follow Initial Patient Care Protocol
2. Identify contaminate and call Poison Control and follow directions given to provide care: 1-800-222-1222
3. Contact Medical Direction as soon as possible with information given by Poison Control and care given

Basic Care Guidelines

Ingested Poisons

- a) Identify and estimate amount of substance ingested
- b) Administer activated charcoal if directed to do so by Poison Control

Inhaled Poisons:

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

Absorbed Poisons

- a) 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

Pediatric Seizure

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

Active Seizure

- a) Assess airway via Airway Protocol
- b) Check blood sugar

Advanced Care Guidelines

- c) Establish IV access
- d) Administer IV or IN Benzodiazepine to stop seizure, may repeat dose in 5 minutes if still seizing
- e) If blood glucose less than 60 give IV Glucose or Glucagon if no IV access

Post Seizure

Basic Care Guidelines

- a) Protect airway
- b) Check blood sugar.

Advanced Care Guidelines

- c) Establish IV
- d) If blood glucose less than 60 give Dextrose slowly IV 0.5 grams/kg up to 25 grams

Pediatric Shock

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Assess airway via Airway Protocol
- b) Assess circulation and perfusion.
- c) Assess mental status.
- d) Expose the child only as necessary to perform further assessments. Maintain the child's body temperature throughout the examination.
- e) Initiate transport. Perform focused history and detailed physical examination en route to the hospital if patient status and management of resources permit.

Advanced Care Guidelines

- f) Initiate cardiac monitoring
- g) Establish IV access using an age-appropriate large-bore catheter with large-caliber tubing. If intravenous access cannot be obtained in a child younger than six years, proceed with intraosseous access. Do not delay transport to obtain vascular access
- h) Administer a fluid bolus of normal saline at 20 ml/kg set to maximum flow rate. Reassess patient after bolus. If signs of shock persist, bolus may be repeated at the same dose up to two times for a maximum total of 60 ml/kg

Suspected Child Abuse

1. Follow Initial Patient Care Protocol

Basic Care Guidelines

- a) Approach child slowly to establish rapport (except in life-threatening situations), then perform exam
- b) Treat obvious injuries according to appropriate protocol
- c) Genital exam only if indicated in the presence of blood, known or obvious injury and or trauma
- d) Interview parents separate from child, if possible
- e) Transport if permitted by parents
- f) If parents do not allow transport, notify law enforcement for assistance
- g) Communicate vital information only - additional info can be given to attending RN and/or Physician on arrival
- h) Record observations and factual information on run report
- i) Report all suspected abuse to the National hotline at 1-800-362-2178 within 24 hours of your contact of the patient. This will be an oral report only
- j) Within 48 hours of oral reporting, you must submit a written report for all suspected abuse to the Department of Human Services

Pediatric Trauma

1. Follow Initial Patient Care Protocol
2. Follow the Out-of-Hospital Trauma Triage Destination Decision Protocol for the identification of time critical injuries, method of transport and trauma facility resources necessary for treatment of those injuries

Basic Care Guidelines

- a) Follow Shock Protocol if shock is present

Hemorrhage Control:

Basic Care Guidelines

- b) Control bleeding with direct pressure. Large gaping wounds may need application of a bulky sterile gauze dressing and direct pressure by hand
- c) Elevation of extremity may be used to help control bleeding if no bone or joint injury evident
- d) If bleeding persists, consider appropriate arterial pressure points in upper and lower extremities
- e) If unable to control hemorrhage with direct pressure consider application of a tourniquet

Advanced Care Guidelines

- f) Establish large bore IV
- g) Start Second IV if severe trauma
- h) Cardiac Monitor

Chest Trauma:

Basic Care Guidelines

- a) Seal open chest wounds immediately. Use occlusive dressing taped down. 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

Pediatric Trauma (continued)

Abdominal Trauma

- 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

Head and Neck Trauma

- a) Establish and maintain manual spinal immobilization
- b) Place the head in a neutral in-line position unless the patient complains of pain or the head does not easily move into this position
- c) Continue manual stabilization, apply a rigid cervical collar, and immobilize the patient on a long backboard or similar device
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
- a) 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
- b) Reassess vitals, GCS and pupillary response frequently

IOWA EMS TREATMENT PROTOCOLS

Section 4 Appendices

A - Out of Hospital Trauma Triage Destination Decision Protocol	65
B - EMS Out of Hospital Do Not Resuscitate (DNR) Protocol	67
C - EMS Approved Abbreviations	68
D - Guidelines for New Protocol Development	69
E - Physician on Scene	70
F - Air Medical Transport	71
G - Discontinuation of Resuscitation	72
H - Strategies for Reperfusion Therapy	73
I - S.T.A.R.T. (Simple Triage and Rapid Treatment)	74
J - Pediatric JumpSTART	75
K - Guidelines for Initiating Organ Donation	76
L - Assessment-Based Spinal Immobilization	77
M - Special Needs Patients	78
EMS Procedures	
N – Blood glucose testing	79
O – Central line access	80
P – Combi-tube insertion	82
Q – CPAP	84
R – Cricothyrotomy	86
S – External jugular IV insertion	87
T – Gastric tube placement	88
U – Intraosseous access (EZ-IO)	89
V – IV maintenance	90
W – King airway insertion	91
X – MAST/PASG	93
Y – Needle chest decompression	94
Z – Pacing (external)	95
AA – Tourniquet application	96
BB – Urinary catheterization	97
CC – Drug Protocols – alphabetically, by generic name	98
DD – Pain Protocol	130
EE – RSI Protocol	133
FF – Medication Assisted (non-paralytic) Intubation	141
GG – Intranasal medication administration	142
HH – Rectal valium administration	144
II – ACLS Algorithms	145
JJ – PALS Algorithms	153
KK – Iowa EMS Scope of Practice	159

Appendix KK

IOWA EMS SCOPE OF PRACTICE

Basic EMS Scope of Practice

Airway and Breathing								
SKILL	FR 79	G	FR 96	EMR	A	D	B	EMT
Airway- Multi-Lumen			X				X	
Airway-Esophageal/Tracheal			X				X	
Airway-Nasal			X		X	X	X	X
Airway-Oral			X	X	X	X	X	X
Manual Airway	X	X	X	X	X	X	X	X
Obstruction - Manual	X	X	X	X	X	X	X	X
Oxygen Deliver			X	X	X	X	X	X
Oxygen Deliver-Humidified			X		X	X	X	X
Sellick's Manuever	X	X	X	X	X	X	X	X
Suctioning - Upper Airway	X	X	X	X	X	X	X	X
Ventilations - Bag Valve	X	X	X	X	X	X	X	X
Ventilations - Mouth	X	X	X	X	X	X	X	X
Ventilations- Manually Triggered					X	X	X	X
Ventilator - Automatic Transport							X	X

Assessment								
SKILL	FR 79	G	FR 96	EMR	A	D	B	EMT
Blood Glucose Monitor							X	
Blood Pressure - Automated	X	X	X		X	X	X	X
Blood Pressure - Manual	X	X	X	X	X	X	X	X
Pulse Oximetry	X	X	X		X	X	X	X

Pharmacological Intervention								
SKILL	FR 79	G	FR 96	EMR	A	D	B	EMT
Auto Injector- Self/Peer Rescue				X			X	X
Autoinjector - Epinephrine							X	
OTC Medications			X		X	X	X	X
Patient Assisted Meds							X	X
Buccal								1
Oral								2
IV Fluid Infusion							X	
1 Buccal			ORAL GLUCOSE					
2. Oral			Glucose/Aspirin					

Appendix KK

IOWA EMS SCOPE OF PRACTICE

Emergency Trauma Care								
SKILL	FR 79	G	FR 96	EMR	A	D	B	EMT
Cervical Stabilization - Manual	X	X	X	X	X	X	X	X
Extrimity Splinting					X	X	X	X
Extrimity Stabilization - Manual	X	X	X	X	X	X	X	X
Eye Irrigation	X	X	X	X	X	X	X	X
Hemmorhage Control	X	X	X	X	X	X	X	X
PASG					X	X	X	X
Spinal immobilization					X	X	X	X
Tourniquet	X	X	X		X	X	X	X

Medical/Cardiac Care								
SKILL	FR 79	G	FR 96	EMR	A	D	B	EMT
Assisted Delivery	X	X	X	X	X	X	X	X
CPR - Manual	X	X	X	X	X	X	X	X
CPR - Mechanical					X	X	X	X
Defibrillator - Automated	X	X	X	X	X	X	X	X

Appendix KK

IOWA EMS SCOPE OF PRACTICE

Advanced EMS Scope of Practice

Airway and Breathing						
SKILL	EMT-I	AEMT	P	PS	PARA	CCP
Airway- Multi-Lumen	X	X	X	X	X	X
Airway-Esophageal/Tracheal	X	X	X	X	X	X
Airway-Nasal	X	X	X	X	X	X
Airway-Oral	X	X	X	X	X	X
BiPAP/CPAP			CPAP	CPAP	X	X
Capnography/ETCO ₂			X	X	X	X
Chest Tube Placement-Assist						X
Chest Tube-Monitoring					X	X
Cricothyrotomy - Percutaneous			X	X	X	X
Cricothyrotomy - Surgical						X
Endotracheal Intubation- Nasal/Oral			X	X	X	X
Endotracheal Intubation- Retrograde						X
Gastric Decompression - NG or OG tube			X	X	X	X
Manual Airway	X	X	X	X	X	X
Needle Chest Decompression			X	X	X	X
Obstruction - Direct Laryngoscopy			X	X	X	X
Obstruction - Manual	X	X	X	X	X	X
Oxygen Deliver	X	X	X	X	X	X
Oxygen Deliver-Humidified	X	X	X	X	X	X
PEEP Theapeutic (>6 cm H ₂ O pressure)				X	X	X
Sellick's Manuever	X	X	X	X	X	X
Suctioning - Upper Airway	X	X	X	X	X	X
Ventilations - Bag Valve	X	X	X	X	X	X
Ventilations - Mouth	X	X	X	X	X	X
Ventilations- Manually Triggered	X	X	X	X	X	X
Ventilator - Automatic Transport	X	X	X	X	X	X
Ventilator - Enhanced						X
Suctioning - Tracheobronchial		X	X	X	X	X

Appendix KK

IOWA EMS SCOPE OF PRACTICE

Assessment						
SKILL	EMT-I	AEMT	P	PS	PARA	CCP
Blood Chemistry Analysis					X	X
Blood Glucose Monitor	X	X	X	X	X	X
Blood Pressure - Automated	X	X	X	X	X	X
Blood Pressure - Manual	X	X	X	X	X	X
Blood Sampling - Arterial						X
Blood Sampling - Capillary Tube	X		X	X		X
Blood Sampling - Venous	X		X	X		X
EKG - Multi lead (interpretive)				X	X	X
EKG - Single lead (interpretive)			X	X	X	X
Hemodynamic Monitoring						X
ICP Monitoring						X
Pulse Oximetry	X	X	X	X	X	X

Pharmacological Intervention						
SKILL	EMT-I	AEMT	P	PS	PARA	CCP
Auto Injector- Self/Peer Rescue	X	X	X	X	X	X
Autoinjector - Epinephrine	X	X	X	X	X	X
OTC Medications	X	X	X	X	X	X
Patient Assisted Meds	X	X	X	X	X	X
Aerosolized/Nebulized		1	X	X	X	X
Buccal		2	X	X	X	X
Endotracheal tube			X	X	X	X
Inhaled - Self administered		3	X	X	X	X
Intramuscular		4	X	X	X	X
Intranasal			X	X	X	X
Intravenous push		5	X	X	X	X
Intravenous piggyback			X	X	X	X
Nasogastric			X	X	X	X
Oral		6	X	X	X	X
Recatal			X	X	X	X
Subcutaneous		7	X	X	X	X
Sublingual		8	X	X	X	X
Arterial Line - Monitoring						X
Blood Administration			X	X	X	X
Central Line Monitoring					X	X
IO Insertion		Peds	X	X	X	X
IV Fluid Infusion	X	X	X	X	X	X
Peripheral IV Insertion	X	X	X	X	X	X
Thrombolytic Administration				X	X	X
Umbilical Initiation				X		X

Appendix KK

IOWA EMS SCOPE OF PRACTICE

AEMT DRUG LIST

1 Aerosolized/Nebulized	Beta agonist
2 Buccal	Oral Glucose
3 Inhaled - Self administered	Nitrous Oxide
4 Intramuscular	Nalaxone
5 Intravenous push	Nalaxone/Dextrose
6. Oral	Glucose/Aspirin
7. Subcutaneous	Epinephrine
8. Sublingal	Nitroglycerin

Emergency Trauma Care						
SKILL	EMT-I	AEMT	P	PS	PARA	CCP
Cervical Stabilization - Manual	X	X	X	X	X	X
Extrimity Splinting	X	X	X	X	X	X
Extrimity Stabilization - Manual	X	X	X	X	X	X
Eye Irrigation	X	X	X	X	X	X
Eye Irrigation - Morgan Lens			X	X	X	X
Hemorrhage Control	X	X	X	X	X	X
PASG	X	X	X	X	X	X
Spinal immobilization	X	X	X	X	X	X
Tourniquet	X	X	X	X	X	X

Medical/Cardiac Care						
SKILL	EMT-I	AEMT	P	PS	PARA	CCP
Assisted Delivery	X	X	X	X	X	X
Cardioversion			X	X	X	X
Carotid Massage			X	X	X	X
CPR - Manual	X	X	X	X	X	X
CPR - Mechanical	X	X	X	X	X	X
Defibrillation - Manual			X	X	X	X
Defibrillator - Automated	X	X	X	X	X	X
Transcutaneous Pacing			X	X	X	X
Urinary Catheterization			X	X		X

Appendix B

EMS OUT-OF-HOSPITAL DO-NOT-RESUSCITATE PROTOCOL

Purpose: This protocol is intended to avoid unwarranted resuscitation by emergency care providers in the out-of-hospital setting for a qualified patient.¹ There must be a valid Out-Of-Hospital Do-Not-Resuscitate (OOH DNR) order signed by the qualified patient's attending physician or the presence of the OOH DNR identifier indicating the existence of a valid OOH DNR order.

No resuscitation: Means withholding any medical intervention that utilizes mechanical or artificial means to sustain, restore, or supplant a spontaneous vital function, including but not limited to:

1. Chest compressions,
2. Defibrillation,
3. Esophageal/tracheal/double-lumen airway; endotracheal intubation, or
4. Emergency drugs to alter cardiac or respiratory function or otherwise sustain life.

Patient criteria: The following patients are recognized as qualified patients to receive no resuscitation:

1. The presence of the uniform OOH DNR order or uniform OOH DNR identifier, or
2. The presence of the attending physician to provide direct verbal orders for care of the patient.

The presence of a signed physician order on a form other than the uniform OOH DNR order form approved by the department may be honored if approved by the service program EMS medical director. However, the immunities provided by law apply only in the presence of the uniform OOH DNR order or uniform OOH DNR identifier. When the uniform OOH DNR order or uniform OOH DNR identifier is not present contact must be made with on-line medical control and on-line medical control must concur that no resuscitation is appropriate.

Revocation: An OOH DNR order is deemed revoked at any time that a patient, or an individual authorized to act on the patient's behalf as listed on the OOH DNR order, is able to communicate in any manner the intent that the order be revoked. The personal wishes of family members or other individuals who are not authorized in the order to act on the patient's behalf shall not supersede a valid OOH DNR order.

Comfort Care (♥): When a patient has met the criteria for no resuscitation under the foregoing information, the emergency care provider should continue to provide that care which is intended to make the patient comfortable (a.k.a. ♥ Comfort Care). Whether other types of care are indicated will depend upon individual circumstances for which medical control may be contacted by or through the responding ambulance service personnel.

♥ **Comfort Care** may include, but is not limited to:

1. Pain medication.
2. Fluid therapy.
3. Respiratory assistance (oxygen and suctioning).

¹ *Qualified Patient* means an adult patient determined by an attending physician to be in a terminal condition for which the attending physician has issued an Out of Hospital DNR order in accordance with the law. Iowa Administrative Code 641-142.1 (144A) Definitions.

Appendix A

Out of Hospital Trauma Triage Destination Decision Protocol

IOWA'S TRAUMA SYSTEM

ADULT	OUT OF HOSPITAL TRAUMA TRIAGE DESTINATION DECISION PROTOCOL	ADULT
-------	---	-------

The following criteria shall be utilized to assist the EMS provider in the identification of time critical injuries, method of transport and trauma care facility resources necessary for treatment of those injuries

Step 1 - Assess for Time Critical Injuries: Level of Consciousness & Vital Signs

Glasgow Coma Score <14
Heart Rate >120

Respiratory diff./rate <10 or >29
Systolic B/P <90

If ground transport time to a Resource (Level I) or Regional (Level II) TCF is less than 30 minutes,

Transport to the nearest **Resource (Level I)** or **Regional (Level II)** Trauma Care Facility.

If greater than 30 minutes ground transport time to Resource (Level I) or Regional (Level II)

Transport to the nearest appropriate Trauma Care Facility.

If time can be saved or level of care needs exist, tier with ground or air ALS service program

If step 1 does not apply, move on to step 2

Step 2 - Assess for Anatomy of an Injury

All Penetrating injury to head, neck, torso, and extremities proximal to elbow and knee

Partial or full thickness Burns > 10% TBSA or involving face/airway

Amputation proximal to wrist or ankle

Paralysis or Parasthesia

Suspected two or more long bone fractures

Suspected pelvic fracture

EMS provider judgment for possible abdominal or thoracic injuries.

Crushed, degloved, or mangled extremity

Flail chest

Any open long bone fracture

Open or depressed skull fracture

If ground transport time to a Resource (Level I) or Regional (Level II) TCF is less than 30 minutes,

Transport to the nearest **Resource (Level I)** or **Regional (Level II)** Trauma Care Facility.

If greater than 30 minutes ground transport time to Resource (Level I) or Regional (Level II), Transport to the nearest appropriate Trauma Care Facility.

If time can be saved or level of care needs exist, tier with ground or air ALS service program

If step 2 does not apply, move on to step 3

Step 3 - Consider Mechanism of Injury & High Energy Transfer

Falls – Adult: > 20 ft. (1 story = 10 ft)

Intrusion: > 12 in, occupant site; > 18 in, any site,

Death in same passenger compartment, Vehicle telemetry data consistent with high risk of injury

Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact

Motorcycle crash > 20 mph Rollover (unrestrained occupant) Bicyclist into handlebars

Transport to the nearest appropriate Trauma Care Facility, need not be the highest level trauma care facility.

If step 3 does not apply, move on to step 4

Step 4 - Consider risk factors:

Age > 55 yrs (Risk of injury/death increases)

Time-sensitive extremity injury

EMS provider judgment

Anticoagulation and bleeding disorders

Pregnancy > 20 weeks

Transport to the nearest appropriate Trauma Care Facility, need not be the highest level trauma care facility.

If none of the criteria in the above 4 steps are met, follow local protocol for patient disposition.

When in doubt, transport to nearest trauma care facility for evaluation.

For all Transported Trauma Patients

Contact receiving trauma care facility:

1. Give patient report to include: MOI, Injuries, Vital Signs & GCS, Treatment, Age, Gender and ETA
2. Obtain further orders from Medical Control as needed.

Appendix A

Out of Hospital Trauma Triage Destination Decision Protocol

IOWA'S TRAUMA SYSTEM

PEDIATRIC

OUT OF HOSPITAL TRAUMA TRIAGE DESTINATION DECISION PROTOCOL

PEDIATRIC

The following criteria shall be utilized to assist the EMS provider in the identification of time critical injuries, method of transport and trauma care facility resources necessary for treatment of those injuries

Step 1 - Assess for Time Critical Injuries: Level of Consciousness & Vital Signs

Abnormal Responsiveness: abnormal or absent cry or speech. Decreased response to parents or environmental stimuli. Floppy or rigid muscle tone or not moving. **Verbal, Pain, or Unresponsive** on AVPU scale.

OR

Airway/Breathing Compromise: obstruction to airflow, gurgling, stridor or noisy breathing. Increased/excessive retractions or abdominal muscle use, nasal flaring, stridor, wheezes, grunting, gasping, or gurgling. Decreased/absent respiratory effort or noisy breathing. Respiratory rate outside normal range.

OR

Circulatory Compromise: cyanosis, mottling, paleness/pallor or obvious significant bleeding. Absent or weak peripheral or central pulses; pulse or systolic BP outside normal range. Capillary refill > 2 seconds with other abnormal findings.

If ground transport time to a TCF is less than 30 minutes,

Transport to the nearest **Resource (Level I)** or **Regional (Level II)** Trauma Care Facility.
If time can be saved or level of care needs exist, tier with ground or air ALS service program

If step 1 does not apply, move on to step 2

Step 2 - Assess for Anatomy of an Injury

All Penetrating injury to head, neck, torso, and extremities proximal to elbow and knee

Partial or full thickness burns > 10% TBSA or involving face/airway

Amputation proximal to wrist or ankle Crushed, degloved, or mangled extremity

Paralysis or Parasthesia

Flail chest

Suspected two or more long bone fractures

Any open long bone fracture

Suspected pelvic fracture

Open or depressed skull fracture

EMS provider judgment for possible abdominal or thoracic injuries.

If ground transport time to a TCF is less than 30 minutes,

Transport to the nearest **Resource (Level I)** or **Regional (Level II)** Trauma Care Facility.
If time can be saved or level of care needs exist, tier with ground or air ALS service program

If step 2 does not apply, move on to step 3

Step 3 - Consider Mechanism of Injury & High Energy Transfer

Falls – > 10 feet or Pediatric: > 2-3 times the victims height.

High-risk auto crash:

Intrusion: > 12 in, occupant site; > 18 in, any site,

Ejection (partial or complete) from automobile

Death in same passenger compartment,

Bicyclist into handlebars

Vehicle telemetry data consistent with high risk of injury

Any intentional injury

Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact

Motorcycle crash > 20 mph Rollover (unrestrained occupant)

Transport to the nearest **(Any Level)** Trauma Care Facility.

If step 3 does not apply, move onto step 4

Step 4 - Consider risk factors:

Age <5 yrs (Risk of injury/death increases)

ETOH/drugs

Time-sensitive extremity injury

Transport to the nearest **(Any Level)** Trauma Care Facility.

For all Transported Trauma Patients

Contact Medical Control:

1. Give patient report to include: MOI, Injuries, Vital Signs & GCS, Treatment, Age, Gender and ETA
2. Obtain further orders as needed

Appendix E

PHYSICIAN ON SCENE

Your offer of assistance is appreciated. However, this EMS service, under law and in accordance with nationally recognized standards of care in Emergency Medicine, operates under the direct authority of a Physician Medical Director. Our Medical Director and physician designees have already established a physician-patient relationship with this patient. To ensure the best possible patient care, and to prevent inadvertent patient abandonment or interference with an established physician-patient relationship, please comply with our established protocols.

Please review the following if you wish to assume responsibility for this patient:

1. You must be recognized or identify yourself as a qualified physician.
2. You must be able to provide proof of licensure and identify your specialty.
3. If requested, you must speak directly with the on-line medical control physician to verify transfer of responsibility for the patient from that physician to you.
4. EMS personnel, in accordance with state law, can only follow orders that are consistent with the approved protocols.
5. You must accompany this patient to the hospital, unless the on-line medical control physician agrees to re-assume responsibility for this patient prior to transport.

Appendix F

AIR MEDICAL TRANSPORT Utilization Guidelines for Scene Response

These guidelines have been developed to assist with the decision making for use of air medical transport by the emergency medical services community. The goal is to match the patient's needs to the timely availability of resources in order to improve the care and outcome of the patient from injury or illness.

CLINICAL INDICATORS:

1. Advanced level of care need (skills or medications) exists that could be made available more promptly with an air medical tier versus tiering with ground ALS service, and further delay would likely jeopardize the outcome of the patient
2. Transport time to definitive care hospital can be significantly reduced for a critically ill or injured patient where saving time is in the best interest of the patient
3. Multiple critically ill or injured patients at the scene where the needs exceed the means available
4. EMS Provider 'index of suspicion' based upon mechanism of injury and patient assessment

DIFFICULT ACCESS SITUATIONS:

1. Wilderness or water rescue assistance needed
2. Road conditions impaired due to weather, traffic, or road construction / repair
3. Other locations difficult to access

The local EMS provider must have a good understanding of regional EMS resources and strive to integrate resources to assure that ground and air services cooperate as efficiently and effectively as possible in the best interest of the patient.

Medical directors for ambulance services should assure that EMS providers are aware of their own service's abilities and limitations given the level of care and geographic response area being served. Audits should be conducted on an ongoing basis to assure that utilization of regional resources (ground and air) is appropriate in order to provide the level of care needed on a timely basis.

Appendix G

DISCONTINUATION OF RESUSCITATION

INDICATIONS TO CONSIDER TERMINATION OF RESUSCITATION:

1. Patient is in full arrest with no signs of life present.
2. Patient is considered an adult.
3. Full ACLS has been instituted (Paramedic level) to include rhythm analysis and defibrillation if indicated, advanced airway management, and drugs given per protocol.
4. No return of circulation or shockable rhythm exists.
5. Correctable causes or special resuscitation circumstances have been considered and addressed.

TERMINATION OF RESUSCITATION:

1. Patient meets all five criteria under 'indications' above, or patient is terminally ill/DNR where CPR was started prior to knowledge of resuscitation status.
2. *Physician on-line medical direction* is contacted (while ACLS continues) to discuss any further appropriate actions.
3. ACLS 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 their 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.

Physician on-line medical direction includes either of the following:

1. Hospital based physician contact via phone or radio.
2. Patient's primary care physician or on call physician contact via phone or radio.

Special Considerations

Patients with profound hypothermia or drug or toxin overdose may benefit from continued resuscitation.

Appendix H

Strategies for Reperfusion Therapy Reperfusion therapy screening not limited to paramedic level

This form should be completed for patients suffering from Acute Coronary Syndromes. This tool will be used to triage patients to the appropriate receiving facility, and provide a template for passing information on to the receiving facility. Fibrinolytic screening may be done at the EMT-B level; however the decision to bypass a local hospital to transport to a Percutaneous Coronary Intervention (PCI) capable facility is reserved for the PS level.

1. If available, obtain 12-Lead EKG and transmit to receiving facility
2. EMT level – Transport patient to closest appropriate facility. Contact medical control for decision on completing thrombolytic checklist.
3. PS Level – Evaluate 12-Lead for evidence of STEMI.

If STEMI is present, determine appropriate destination.

- If transport time to a facility capable of providing emergency PCI care is 60 minutes or less, it is recommended that all of these patients be transported directly to the emergency PCI capable facility.
- If transport time to a facility capable of providing emergency PCI care is between 60 - 90 minutes, transport to the PCI capable facility should be considered.
- If transport is initiated to a non-PCI facility:
 1. Complete fibrinolytic therapy checklist below.
 2. If a local protocol for fibrinolytic therapy in the field has been established, then proceed with fibrinolytic protocol if:
 - Authorized by voice contact with medical control, and
 - The paramedic specialist has received training and has the approval of their physician medical director

In all instances those patients requiring immediate hemodynamic or airway stabilization should be transported to the closest appropriate facility.

If STEMI is not present, transport patient to closest appropriate facility.

Note: See Fibrinolytic Checklist on the following page

Appendix H

If directed by medical control, complete fibrinolytic checklist below

FIBRINOLYTIC CHECKLIST

Any **YES** findings will be relayed to medical control. **Absolute Contraindications** preclude the use of fibrinolytics. **Relative Contraindications** require consultation with medical control.

DATE:	PATIENT AGE:	MALE	FEMALE	INCIDENT/RECORD #:	YES	NO
ABSOLUTE CONTRAINDICATIONS						
Any known intracranial hemorrhage?						
Known structural cerebral vascular lesion?						
Ischemic stroke within 3 months EXCEPT acute ischemic stroke within 3 hours?						
Suspected aortic dissection?						
Active bleeding or bleeding diathesis (excluding menses)?						
Significant closed head trauma or facial trauma within 3 months?						
RELATIVE CONTRAINDICATIONS						
History of chronic, severe, poorly controlled hypertension?						
Severe, uncontrolled hypertension on presentation (S >180mmHg or D>110mmHg)						
History of prior ischemic stroke >3 months, dementia, or known intracranial pathology?						
Traumatic or prolonged (>10 min) CPR or major surgery (<3 weeks)						
Non-compressible vascular punctures?						
Pregnancy?						
Active peptic ulcer?						
Current use of anticoagulants?						
EMS Provider Print Name:				Signature:		

Appendix J

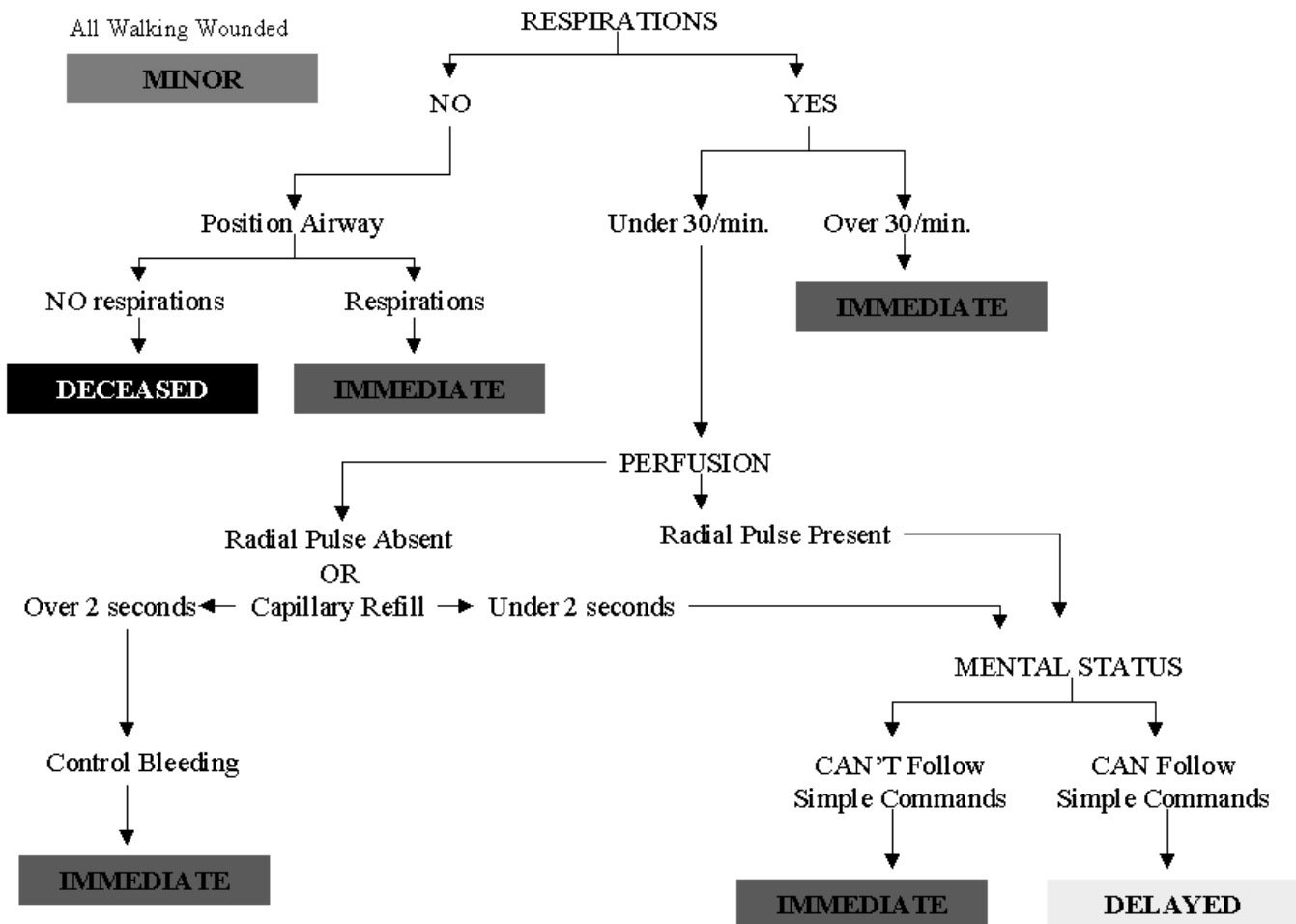
START

(Simple Triage and Rapid Treatment)

The following are guidelines for initial tactical triage using the START method. START is most useful in initially clearing the disaster zone where there are numerous casualties. **It focuses on respiration rate, perfusion, and mental status and takes under one minute to complete.** Once the patient moves toward a higher level of care (evacuation), a more detailed approach to triage may be needed.

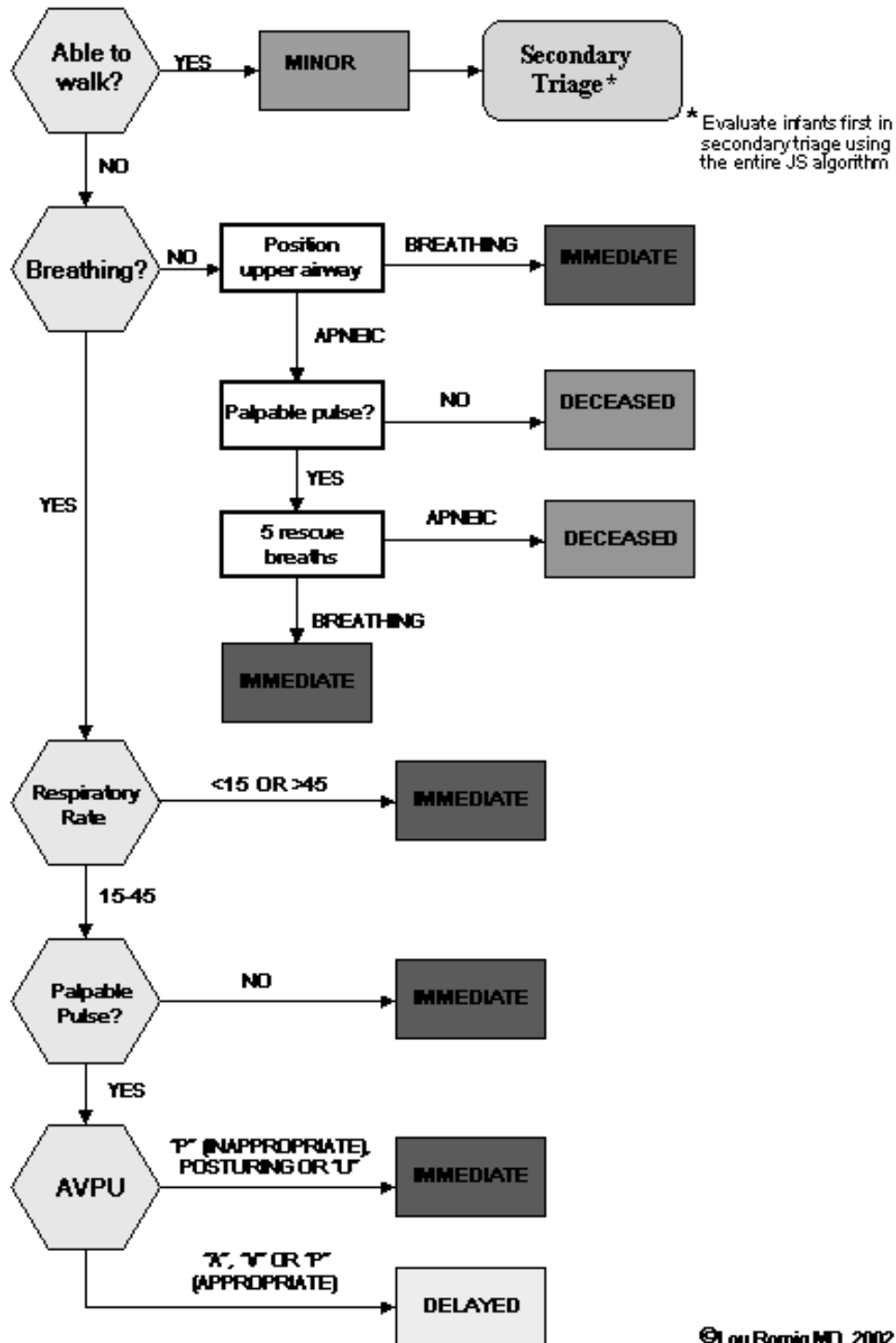
Respirations
Perfusion
Mental Status

Green = Minor/Ambulatory
Yellow = Delayed
Red = Immediate
Black = Deceased/Expectant



Appendix I

JumpSTART Pediatric MCI Triage®



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Appendix K

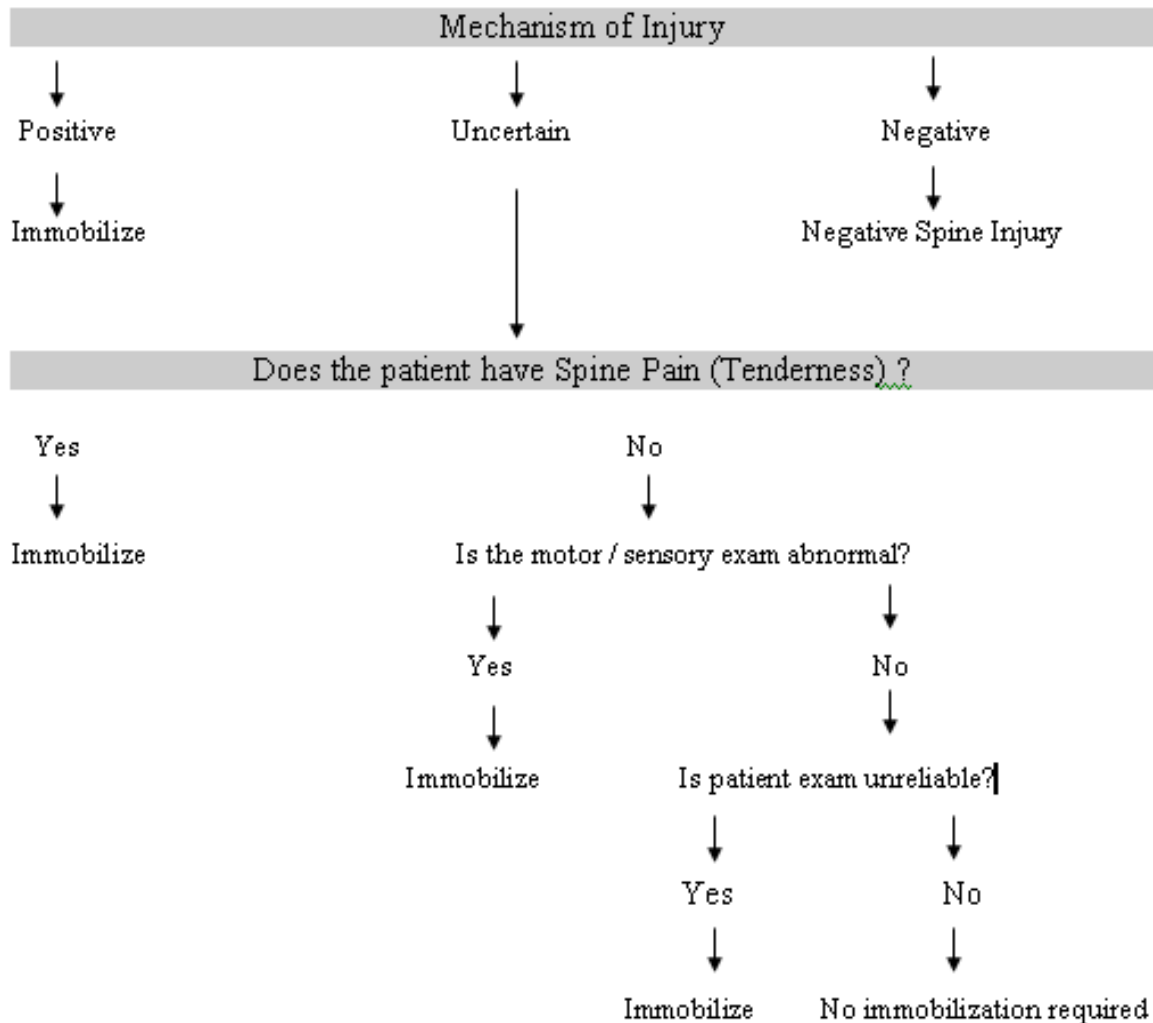
Guidelines for EMS Provider Initiating Organ & Tissue Donation At the Scene of the Deceased

1. All appropriate patient care protocols will be enacted to assure patient care is provided according to prevailing standards.
2. If resuscitation efforts are unsuccessful, or if upon arrival the patient is deceased and without indications to initiate resuscitation, then on-line medical direction will be contacted to confirm that no further medical care is to be given.
3. As per Iowa Code 142C.7 a medical examiner or a medical examiner's designee, peace officer, fire fighter, or emergency medical care provider may release an individual's information to an organ procurement organization, donor registry, or bank or storage organization to determine if the individual is a donor.
4. As per Iowa Code 142C.7 Any information regarding a patient, including the patient's identity, however, constitutes confidential medical information and under any other circumstances is prohibited from disclosure without the written consent of the patient or the patient's legal representative.
5. At least one EMS provider should remain at the scene until the appropriate authority (medical examiner, funeral home, public safety, etc.) is present.
6. Contact IOWA DONOR NETWORK at 800-831-4131

Appendix L

Assessment Based Spinal Immobilization

The following represents clinical criteria for initial assessment of spine injury for patients with an uncertain mechanism of injury. **The use of this procedure is only approved for the Paramedic Specialist level as outlined in the Iowa EMS Scope of Practice.**



Definition of "Spinal Immobilization": Mechanical immobilization of the entire spinal column that is inclusive of the head through the pelvis.

*Assess for the presence of distracting injuries.

* Qualified EMS provider: A certified Paramedic Specialist who has demonstrated the skills necessary to competently perform this procedure and has the approval of the medical director.

Appendix M

Guidelines for EMS Providers responding to a patient with special needs (This Protocol is not intended for interfacility transfers.)

These guidelines should be used when an EMS provider, responding to a call, is confronted with a patient using specialized medical equipment that the EMS provider has not been trained to use, and the operation of that equipment is outside of the EMS provider's scope of practice. The EMS provider may treat and transport the patient, as long as the EMS provider doesn't monitor or operate the equipment in any way while providing care.

When providing care to patients with special needs, EMS personnel should provide the level of care necessary, within their level of training and certification. When possible, the EMS provider should consider utilizing a family member or caregiver who has been using this equipment to help with monitoring and operating the special medical equipment if necessary during transport.

Some examples of special medical devices:

- PCA (patient controlled analgesic)
- Chest Tube

Appendix C

EMS APPROVED APBBREVIATIONS

ā	before	Mgtt	microd
ABC	airway, breathing, circulation	MD	medical doctor
ALS	advanced life support	mEq	milliequivalents
AMI	acute myocardial infarction	mg	milligram
amps	ampules	MI	myocardial infarction
ASA	aspirin	min	minute
AT	atrial tachycardia	ml	milliliter
AV	atrioventricular	mm	millimeter
bicarb	sodium bicarbonate	MS	morphine sulfate
BID	twice a day	NaCl	sodium chloride
BLS	basic life support	NaHCO ₃	sodium bicarbonate
BP	blood pressure	NG,N/G	nasogastric
BS	blood sugar	nitro	nitroglycerine
c̄	with	NPO	nothing by mouth
CAD	coronary artery disease	NS	normal saline
CC	chief complaint	NSR	normal sinus rhythm
cc	cubic centimeter	NTG	nitroglycerine
CCU	coronary care unit	O ₂	oxygen
CHB	complete heart block	OB	obstetrics
CHF	congestive heart failure	OD	overdose
cm	centimeter	OR	operating room
CNS	central nervous system	P	pulse
c/o	complains of	p̄	after
CO	carbon monoxide	PAC	premature atrial contraction
CO ₂	carbon dioxide	PAT	paroxysmal atrial tachycardia
		PCR	patient care record
COPD	chronic obstructive pulmonary disease	PE	physical exam, pulmonary edema
CPR	cardiopulmonary resuscitation	pedi	pediatric
CSF	cerebral spinal fluid	PERL	pupils equal, reactive to light
CVA	cerebral vascular accident	PJC	premature junctional contraction
D/C	discontinue	po	by mouth
DOA	dead on arrival	pr	per rectum
D5W	5% dextrose in water	prn	whenever necessary, as needed
Dx	diagnosis	PVC	premature ventricular contraction
ED	emergency department	q̄	every
EKG, ECG	electrocardiogram	QID	for times a day
Epi	epinephrine	R	respirations
ER	emergency room	R/O	rule out
ET	endotracheal	RN	registered nurse
ETOH	alcohol	Rx	treatment
fib	fibrillation	s̄	without
fl	fluid	SC	subcutaneous
fx	fracture	Sec	second
GI	gastrointestinal	SL	sublingual
gm	gram SOB	SOB	shortness of breath
gr	grain SQ	SQ	subcutaneous
gt(t)	drop(s)	STAT	immediately
h,hr	hour	s/s	sign, symptoms
hx	history	SVT	supraventricular tachycardia
ICU	intensive care unit	Sx	symptoms
IM	intramuscular	TIA	transient ischemic attack
IV	intravenous	TID	three times a day
Kg	kilogram	TKO	to keep open
KVO	keep vein open	VF	ventricular fibrillation
L	liter	w/s	watt second setting
LOC	level of consciousness	x	times
LR	lactated ringers	y/o	years old

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Appendix D

GUIDELINES FOR NEW PROTOCOL DEVELOPMENT

A RATIONAL DECISION MAKING PROCESS*

(Also can be used to evaluate existing protocols)

Making a decision to develop a new protocol or evaluate an existing one should be based on a rational process. Questions that should be asked and answered when considering a new drug therapy or procedure are as follows:

Key Questions for any New Protocol

1. Is the drug therapy or procedure medically indicated and safe?
2. Is it within the scope of practice for the provider?
3. How specifically will this protocol benefit patient care?
4. What specifically is needed to implement this protocol (education/training, medical director protocol development/authorization, equipment needs, etc.)?
5. How will this protocol impact operations?
6. What is the opinion of providers concerning this protocol?
7. Does the medical community support this protocol change?
8. What are all the costs versus benefits associated with implementation and maintenance?
9. What are the medical-legal implications?
10. What ongoing provider involvement such as skills maintenance and continuous quality improvement is necessary?
11. How will success be measured?

Rational Protocol Development Process to Make the Right Protocol Decision

1. Study the issue thoroughly
2. Identify key questions
3. Compare with goals
4. Assess fit with system
5. Cost benefit analysis
6. Identify measuring tools

Stakeholders in this process are recognized to include, but not be limited to:

1. Medical direction (on-line and off-line)
2. Educators/training programs
3. Regulators of policy and rules
4. Service directors
5. Service providers
6. Consumers
7. Third party payers

*Developed based upon discussion at the October 1998 meeting of the Quality Assurance, Standards, and

Protocols subcommittee of the Iowa EMS Advisory Council; and on concepts from the article '*When to Implement Clinical Protocol Change?*' From EMS Best Practices September 1998
