Attachment 18

EMS TREATMENT PROTOCOLS

ADULT & PEDIATRIC

Iowa Department of Public Health

BUREAU OF EMERGENCY AND TRAUMA SERVICES

Statewide

EMS TREATMENT PROTOCOLS

ADULT & PEDIATRIC

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IOWA EMS TREATMENT PROTOCOLS

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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. 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.*"

Use of skills in the out of hospital setting are limited to the EMS provider's scope of practice and EMS service program's 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 outlines skills by certification level.

It is the intent of the Quality Assurance, Standards and Protocols sub-committee and the Iowa EMS Advisory Council that these protocols will serve as a standard throughout Iowa's EMS system. **The Bureau of Emergency and Trauma Services recommends that current protocols be available on all authorized service vehicles.**

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."*

Any changes or revisions made by the EMS service medical director must be on file with the State EMS Regional Coordinator.
The Iowa *Statewide EMS Treatment Protocols, Adult & Pediatric* is available at http://www.idph.state.ia.us/ems/protocols.asp

The *Iowa EMS Scope of Practice* is available at http://www.idph.state.ia.us/ems/scope_of_practice.asp

Contact information for the Bureau of Emergency and Trauma Services staff is available at http://www.idph.state.ia.us/ems/staff.asp

Protocol Authorization

This authorization page allows for the approval of one or multiple services by the same medical director.

Print or type each service name, select type and level of authorization.

The service medical director must approve the protocol in accordance with the authorized level of service.

The service must maintain documentation of protocol, medication and scope of practice update training.

These protocols are to be considered a standing order. Communication with medical control is not required prior to performing any protocol action. EMS providers should call in for further direction or confirmation of orders whenever the situation warrants. YES ☐ NO ☐ The emergency medical care provider present with the highest level of certification on the transporting service shall determine, based upon patient need, the appropriate level of provider to attend the patient during transport. YES ☐ NO ☐							
SERVICE TYPE	Ambulance						
	Nontransport						
SELECT THE LEVEL OF AUTHORIZATION	EMR						
	EMT-B/EMT						
	EMT-I						
	AEMT						
	EMT-P						
	EMT-P/CCT (submit CCT protocols)						
	PS/Paramedic						
	PS/Paramedic/CCT (submit CCT protocols)						
APPROVAL OF SKILLS WITHIN CERTIFICATION LEVEL + Iowa's Scope of Practice requires medical director approval and documentation of additional training	**SKILLS: Mark the column that corresponds with the service if the skill is approved**	**MINIMUM LEVEL**					
	King airway	EMR					
	+ Pulse oximetry	EMR					
	Esophageal/tracheal double-lumen airway	EMT-B					
	IV maintenance	EMT-B					
	+ Glucose monitor	EMT-B, EMT					
	Patient-assisted Rx: inhaler, epipen, NTG	EMT-B, EMT					
	+ Service stocks the auto-inject epi	EMT-B, EMT					
	+ Central line access	EMT-I					
	+ CPAP	EMT, AEMT					
	Gastric tube-OG/NG	EMT-P					
	Intraosseous insertion	AEMT, EMT-P					
	Needle Chest Decompression	EMT-P					
	Chricothyrotomy- percutaneous	EMT-P					
	Endotracheal intubation-nasal	EMT-P					
	Rapid Sequence Induction (attach protocol)	PS/Paramedic					
	Thrombolytics (attach protocol)	PS/Paramedic					
	Selective Spinal Immobilization	EMT,AEMT,Para					

Protocol Medications

These drugs are 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 added.

BASIC RX	ADVANCED RX (CONTINUED)	ADVANCED RX (CONTINUED)
Oxygen	Diazepam	Procainamide
Aspirin	Diphenhydramine	Sodium Bicarbonate
Activated Charcoal	Dopamine	Thiamin
Autoinject Epinephrine	Epinephrine	Vasopressin
Glutose Paste	Fentanyl	**MEDICAL DIRECTOR ADDED**
	Glucagon	
ADVANCED RX	Lidocaine	
Lactated Ringer's	Lorazepam	
Normal Saline	Magnesium Sulfate	
Adenosine	Midazolam	
Amiodarone	Morphine Sulfate	
Albuterol	Naloxone	
Atropine	Nitroglycerine	
Dextrose	Odansetron	

Protocol Revisions

List below or attach all changes made by the physician medical director.

PAGE	PROTOCOL NAME	CHANGES MADE

Medical Director Statement of Affirmation

I have reviewed the Iowa EMS Scope of Practice and authorize these protocols, assigned skills, medications and listed/attached revisions for the following services.
SERVICE NAME:

Medical Director Print Name	Signature	Date

IOWA EMS TREATMENT PROTOCOLS

Section 2

Adult Treatment Protocols

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Initial Patient Care Protocol

REVISED 2012

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 oximetry or $EtCO_2$ 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)
   c) Obtain vital signs., including blood glucose if available and indicated

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)

REVISED 2012

1. Follow Initial Care Protocol for all Patients

BASIC CARE GUIDELINES

a) Give nothing by mouth

ADVANCED CARE GUIDELINES

b) Consider a fluid bolus if indicated.

Evaluate the need for pain and nausea control

Acute Coronary Syndrome

REVISED 2012

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Place patient in position of comfort, loosen tight clothing and provide reassurance. If patient is complaining of shortness of breath, has signs of respiratory distress and pulse oximetry of less than 94% then titrate oxygen to maintain a saturation of 94-99%

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

c) If patient is alert and oriented and expresses no allergy to aspirin have patient chew nonenteric aspirin 160 – 325 mg

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 systolic blood pressure is 90 mmHg or above, give one dose. If patient is taking erectile dysfunction drugs such as Viagra, contact medical direction prior to giving nitroglycerin

g) Repeat one dose of nitroglycerin in 3-5 minutes if pain continues, systolic blood pressure is 90 mmHg or above and authorized by medical direction, up to a maximum of three doses

h) If systolic blood pressure less than 90 mmHg or patient does not have prescribed nitroglycerin, 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 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 systolic blood pressure 90 mmHg or above for symptoms of chest pain or atypical cardiac pain. Repeat one dose in 5 minutes if pain continues and systolic blood pressure is greater than 90 mmHg or above. Up to a maximum of three doses should be tried before administering morphine sulfate

n) If pain continues after administration of nitroglycerin and systolic blood pressure remains above 90 mmHg administer morphine sulfate following the AHA ST Elevated Myocardial Infarction (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

REVISED 2012

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% - 99%

Breathing spontaneous on initial assessment without adequate ventilation present

a) Check airway for obstruction and clear if needed

b) After airway is 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 and depth then reassess

b) If head tilt chin lift is not successful, check airway for obstruction and clear if needed

c) After airway is clear, assist ventilation

d) If adequate ventilation is not maintained, proceed to an advanced airway

Altered Mental Status

REVIEWED 2011

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Obtain blood glucose

b) If conscious & able to swallow, administer glucose 15 gm by mouth

ADVANCED CARE GUIDELINES

c) If blood sugar less than 60 mg/dL administer D50 12.5 - 25 gm IV

d) If no vascular access administer glucagon 1 mg IM

e) Evaluate the need for naloxone 1 mg IV. If no response may repeat in 3 minutes

f) Evaluate the need for intubation

Amputated Part

REVIEWED 2011

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

h) Consider pain control

Apparent Death

REVISED 2012

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 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 the reason(s) 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

Asthma

REVISED 2012

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

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

   i. Assist patient in administering a single dose if they have not done so already

   ii. Reassess patient and assist with second dose if necessary per medical direction

ADVANCED CARE GUIDELINES

b) Administer albuterol 2.5 mg via nebulizer

c) Evaluate the need for epinephrine 1:1,000 concentration 0.3-0.5 mg IM.

d) Evaluate the need for CPAP, if available

e) Evaluate the need for intubation

Behavioral Emergencies

REVISED 2012

1. Follow Initial Patient Care Protocol

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

BASIC CARE GUIDELINES

a) Consider medical or traumatic causes of behavior problems

b) Keep environment calm

ADVANCED CARE GUIDELINES

c) For severe anxiety, consider a benzodiazepine such as
   i. Diazepam 2mg IV every 5 minutes up to 10 mg maximum
      OR
   ii. Diazepam 5-10mg IM

d) For excited delirium, consider administering ziprasidone (Geodon) 10-20 mg IM, if available, or similar medication

Burns

REVISED 2013

1. Follow Initial Patient Care Protocol

Thermal Burns

BASIC CARE GUIDELINES

a) Initially stop the burning process with water or saline

b) Perform primary survey with attention to airway and ventilation

c) Estimate percent of body surface area injured and depth of injury

d) If wound is less than 10 % Body Surface Area, cool down burn with Normal Saline

e) Remove smoldering clothing and jewelry and expose area

f) Continually monitor the airway for evidence of obstruction

g) Cover the burned area with plastic wrap or a dry sterile dressing

h) Do not break blisters

i) Do not use any type of ointment, lotion, or antiseptic

j) Keep patient warm

ADVANCED CARE GUIDELINES

k) Establish an IV of LR or NS. For severe burns, administer 500 ml bolus

l) Contact medical control for further fluid administration

m) Refer to Pain Control protocol

n) Transport according to the Out-of-Hospital Trauma Destination Decision Protocol (Appendix B)

Burns (continued)

Chemical Burns

BASIC CARE GUIDELINES

a) Brush off powders prior to flushing. Lint roller may also be used to remove powders prior to flushing

b) 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 according to the Out-of-Hospital Trauma Destination Decision Protocol (Appendix B)

ADVANCED CARE GUIDELINES

g) 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 according to the Out-of-Hospital Trauma Destination Decision Protocol (Appendix B)

ADVANCED CARE GUIDELINES

d) Establish a large bore IV if indicated and infuse as patient condition warrants

e) Refer to Pain Control protocol

Burns (continued)

Electrical Burns

BASIC CARE GUIDELINES

a) Treat soft tissue injuries associated with the burn with dry dressing

b) Treat for shock if indicated

c) Transport according to the Out-of-Hospital Trauma Destination Decision Protocol (Appendix B)

ADVANCED CARE GUIDELINES

d) Refer to Pain Control protocol

Cardiac Arrhythmias

NEW 2013

1. Follow Initial Care Protocol for all Patients

IF NO PULSE

BASIC CARE GUIDELINES

a) Perform high quality CPR immediately, apply AED and follow device prompts

ADVANCED CARE GUIDELINES

b) Perform high quality CPR immediately, apply monitor and check rhythm as soon as possible

VENTRICULAR FIBRILLATION OR VENTRICULAR TACHYCARDIA

a) Defibrillate at manufacturer's specification, immediately resume CPR for two minutes

b) Organize therapies such as rhythm and pulse checks, defibrillation, IV/IO access, medication administration and airway management around two minute cycles of CPR

c) Evaluate for treatable causes

d) Administer a vasopressor as close to the rhythm check as possible
   a. Administer epinephrine 1:10,000 concentration 1 mg IV or IO every 3-5 minutes
   b. Consider administration of vasopressin 40 units IV or IO in place of first or second epinephrine dose

e) Administer an anti-arrhythmic as close to the rhythm check as possible
   a. Administer amiodarone 300 mg IV or IO, repeat 150 mg in 5 minutes

TORSADES DE POINTES

a) Administer magnesium sulfate 1-2 g diluted in 10 ml of d5w IV or IO, delivered over 5-20 minutes

Cardiac Arrythmias (continued)

ASYSTOLE/PEA

a) Organize therapies such as rhythm and pulse checks, IV/IO access, medication administration and airway management around two minute cycles of CPR

b) Evaluate for treatable causes

c) Administer a vasopressor as close to the rhythm check as possible
   a. Administer epinephrine 1:10,000 concentration 1 mg IV or IO every 3-5 minutes
   b. Consider administration of vasopressin 40 units IV or IO in place of first or second epinephrine dose

CARDIAC ARRYTHMIAS WITH PULSE

BASIC CARE GUIDELINES

a) Follow- Acute Coronary Syndrome protocol

ADVANCED CARE GUIDELINES

BRADYCARDIA

b) If symptomatic, administer atropine 0.5 mg IV or IO every 3-5 minutes as needed to maximum dose of 3.0 mg

c) Consider transcutaneous pacing (consider sedation)
   OR
   Consider administering dopamine 2-10 mcg/kg/min IV or IO
   OR
   Consider administering epinephrine 2-10 mcg/min IV or IO

TACHYCARDIA (Rates greater than 150)

a) If patient unstable:
   a. Perform synchronized cardioversion (consider sedation)
   b. If narrow complex, consider administration of adenosine 6 mg IV, may be repeated at 12 mg after two minutes

b) If patient stable
   a. With wide QRS
      i. If regular and monomorphic, consider administration of adenosine 6 mg IV, may be repeated at 12 mg after two minutes

ii. Consider administration of amiodarone 150 mg over 10 minutes IV or IO

b. With narrow QRS

i. Perform vagal maneuvers

ii. Consider administration of adenosine 6 mg IV, may be repeated at 12 mg after two minutes

Childbirth

REVISED 2012

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

c) For newborn management, see newborn resuscitation protocol

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

Congestive Heart Failure

REVISED 2012

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Place patient in position of comfort, typically sitting up, loosen tight clothing and reassure

b) Maintain oxygenation with cannula or mask if oxygen saturations are below 94% titrate to 94% - 99%

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 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 systolic blood pressure is 90 mmHg or above, give one dose. If patient is taking erectile dysfunction drugs such as Viagra, contact medical direction prior to giving nitroglycerin

g) Repeat one dose of nitroglycerin in 3-5 minutes if pain continues if systolic blood pressure is 90 mmHg or above and authorized by medical direction, up to a maximum of three doses

h) Reassess patient and vital signs after each dose of nitroglycerin

i) Further assess the patient and evaluate possible causes (unless other treatment priorities exist)

ADVANCED CARE GUIDELINES

j) If not already preformed, 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

Congestive Heart Failure (continued)

l) Be prepared to intubate patient

m) Monitor EKG and treat dysrhythmias following the appropriate protocol(s)

n) Refer to Appendix F (Reperfusion Strategies)

o) If capability exists, apply CPAP

p) Administer nitroglycerin (tab or spray) 0.4 mg sublingually if systolic blood pressure 90 mmHg or above

Frostbite

REVIEWED 2011

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) Refer to pain control protocol

Heat Illness

REVIEWED 2011

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)

Hypothermia

REVIEWED 2011

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Remove wet clothing

b) If able, check core temperature

c) Handle patient very gently

d) Cover patient with blankets

ADVANCED CARE GUIDELINES

e) Administer warm IV fluids if available, do not administer cold fluids

Nausea & Vomiting

REVIEWED 2011

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Give nothing by mouth

ADVANCED CARE GUIDELINES

b) Consider fluid bolus IV/IO if evidence of hypovolemia and lung sounds are clear

c) If patient nauseated or is vomiting, consider anti-emetic medication such as ondansetron (Zofran) 4 mg IV

d) Consider intubating patients with altered mental status who are vomiting and cannot protect their airway

Pain Control

REVIEWED 2012

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

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

ADVANCED CARE GUIDELINES

b) Consider administration of pain medications for patients that have significant pain, do not have a decreased level of consciousness, are hemodynamically stable, and have oxygen saturations above 94% medication. Example:

   - Morphine 2-4 mg via IV, repeated in 5 min
     OR
   - Fentanyl 25 to 50 mcg IV every 5 minutes as needed to a maximum of 100 mcg

c) Administer naloxone 1 mg IV for respiratory depression from narcotics. May repeat once if needed

d) For severe pain consider anxiolytic medication

   - Midazolam 0.5-2.5 mg IV / IM repeated every 5 minutes as needed to a maximum of 5 mg
     OR
   - Diazepam 2-5 mg IV / IM repeated every 5 minutes as needed to a maximum of 10 mg
     OR
   - Lorazepam 2mg IV, repeated every 30 minutes as needed to a maximum of 4 mg. Use for long transports

e) Monitor ECG and O2 saturations

Pain Control (Continued)

f) The patient must have vital signs taken prior to each dose 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

REVIEWED 2011

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

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

Post Resuscitation with Return of Spontaneous Circulation

NEW 2013

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Maintain oxygen saturation between 94% - 99%

ADVANCED CARE GUIDELINES

b) Consider advanced airway

c) If available, perform waveform capnography, maintaining PETCO2 35-40 mm Hg

d) Treat hypotension (SBP <90 mm Hg)
   i. Administer 1-2 L NS or LR
   ii. Administer dopamine 5-10 mcg/kg/min
   iii. If bradycardic, consider administration of epinephrine 0.1-0.5 mcg/kg/min

e) If unable to follow commands, consider induced hypothermia if it can be maintained by receiving hospital

f) If available, obtain 12-lead EKG

g) If available, obtain blood glucose
   i. If blood sugar less than 60 mg/dL administer D50 12.5 - 25 grams IV or IO

Seizure

REVIEWED 2012

1. Follow Initial Patient Care Protocol

Active seizure

BASIC CARE GUIDELINES

a) Protect airway

b) Check blood glucose level, if available, and treat hypoglycemia if present

ADVANCED CARE GUIDELINES

c) Administer valium titrate 2 mg IV push until seizure stops or maximum dose of 10 mg is given
OR
Administer lorazepam 1 mg IV push, titrating 1 mg at a time until the seizure stops or until maximum dose of 10 mg is given

Post seizure

BASIC CARE GUIDELINES

a) Protect airway

b) Check blood sugar and treat hypoglycemia if present

ADVANCED CARE GUIDELINES

c) Consider thiamine 100 mg IM

Selective Spinal Immobilization

(Previously: Assessment Based Spinal Management)

Revised 2015

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

2. Patient Presentation:

   a) This protocol is intended for patients who present with a traumatic mechanism of injury.

   b) Immobilization is contraindicated for patients who have penetrating trauma who do not have a neurological deficit.

3. Patient Management:

   a) Assessment:

      i. Assess for mental status, neurological deficits, spinal pain, tenderness, any evidence of intoxication, or other severe injuries.

      ii. While maintaining spinal alignment, examine the spine for tenderness on palpation or deformities.

   b) Treatment and Interventions:

      i. Apply cervical restriction if there is any of the following:

         1. Patient complains of neck pain.

         2. Any neck tenderness of palpation.

         3. Any abnormal mental status, including extreme agitation, or neurological deficit.

         4. Any evidence of alcohol or drug intoxication

         5. There are other severe or painful injuries present.

         6. Any communication barrier that prevents accurate assessment.

Selective Spinal Immobilization (continued)

ii. Immobilize Patient with cervical collar and a long spine board, full body vacuum splint, scoop stretcher, or similar device if:

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

Note 1: Distracting injuries or altered mental status does not necessitate long spine board use.

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

Sexual Assault

REVIEWED 2011

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Identify yourself to the patient, assure patient that they are safe and 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

Shock

NEW 2014

1. Follow Initial Care Protocol for all Patients
2. Maintain oxygen saturation between 94% - 99%

Hypovolemic External Bleeding

BASIC CARE GUIDELINES

a) Avoid further heat loss

b) Splint extremities as needed

c) Follow Hemorrhage Control Protocol

iii. Control bleeding with direct pressure. Large gaping wounds may need application of a bulky sterile gauze dressing and direct pressure by hand

iv. Consider application of tourniquet if unable to control hemorrhage with direct pressure

ADVANCED CARE GUIDELINES

d) Establish IV/IO access

e) Administer 20 ml/kg, up to 500ml, NS or LR. If available, administer warm fluids. Repeat as needed to maintain a systolic pressure of 90 – 100 mmHg.

Hypovolemic Internal Bleeding

BASIC CARE GUIDELINES

a) Place patient in supine position

b) Consider use of PASG for lower extremity or pelvis fractures

ADVANCED CARE GUIDELINES

c) Establish IV/IO access
d) If radial pulse is absent or systolic blood pressure is less than 90 mmHg, administer 20ml/kg, up to 250ml, NS or LR. Repeat as needed to until radial pulse returns or systolic blood pressure reaches 90 mmHg.

Cardiogenic

BASIC CARE GUIDELINES

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

ADVANCED CARE GUIDELINES

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

Obstructive Shock: Tension Pneumothorax

BASIC CARE GUIDELINES

a) Place in position of comfort

ADVANCED CARE GUIDELINES

b) Perform needle decompression

Obstructive Shock: Pericardial Tamponade

BASIC CARE GUIDELINES

a) Place in position of comfort

Shock (continued)

ADVANCED CARE GUIDELINES

b) The goal should be to minimize scene time with time critical injuries, including establishing IV access en route.

c) Administer 20 ml/kg, up to 500ml, NS or LR. Repeat as needed to maintain a systolic pressure of 90 mmHg.

Obstructive Shock: Pulmonary Embolus

BASIC CARE GUIDELINES

a) Place in position of comfort

b) Avoid further heat loss

ADVANCED CARE GUIDELINES

c) Administer 20 ml/kg, up to 500ml, NS or LR. Repeat as needed to maintain a systolic pressure of 90 mmHg

d) If available, obtain 12-lead EKG

e) Evaluate the need for pain and nausea control

f) If patient is alert and oriented and expresses no allergy to aspirin, consider having patient chew nonenteric aspirin 160 – 325 mg

g) Consider administration of dopamine IV or IO at 10-20/mcg/kg/min if systolic blood pressure is less than 90 mmHg.

Distributive Shock: Neurogenic

BASIC CARE GUIDELINES

a) Place supine

b) Avoid further heat loss

Shock (continued)

ADVANCED CARE GUIDELINES

c) Administer 20 ml/kg, up to 500ml, NS or LR. Repeat as needed to maintain a systolic pressure of 90 mmHg

d) Consider administering dopamine at 10-20 mcg/kg/min IV or IO

e) If symptomatic bradycardia is present and does not respond to the treatments above, consider:

   a. administering atropine 0.5 mg every 5 minutes, up to 3 mg

      OR

   b. transcutaneous pacing

Distributive Shock: Anaphylactic

BASIC CARE GUIDELINES

a) If the patient has a physician prescribed Auto-Inject Epinephrine assist with administering it for signs of anaphylaxis

ADVANCED CARE GUIDELINES

b) Administer epinephrine 1:1,000 concentration 0.01 mg/kg IM, up to a single dose of 0.5 mg. Maximum total dose 1 mg.

c) Administer diphenhydramine 25 – 50 mg IV/IM

d) Administer albuterol 2.5mg by nebulizer if respiratory distress

e) Evaluate need for early intubation if severe anaphylaxis

f) For cases of severe anaphylaxis consider administration of epinephrine 1:10,000 concentration 0.3 mg - 0.5 mg IV/IO slowly over 3-5 minutes.

Distributive Shock: Septic Shock

BASIC CARE GUIDELINES

a) Maintain oxygen saturation between 94% - 99%

b) Place patient in supine position

c) If temperature is over 102°F/38.9^{o}C, cool patient (i.e. cool sponges)

Shock (continued)

ADVANCED CARE GUIDELINES

a) Administer 20 ml/kg, up to 500ml, NS or LR. Repeat as needed to maintain a systolic pressure of 90 mmHg
b) If temperature is over 102°F/38.9^{o}C, cool patient
c) Consider administering dopamine at 10-20 mcg/kg/min IV or IO
d) Consider administering diphenhydramine 25 – 50 mg IV/IM

Stroke

REVISED 2012

1. 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) Refer to Appendix G (Reperfusion Strategies)

d) Check blood glucose, if available

ADVANCED CARE GUIDELINES

e) If blood sugar less than 60 mg/dL administer D50 12.5 - 25 gm IV

   i. If no vascular access, administer glucagon 1 mg IM

f) Monitor patient's level of consciousness and blood pressure every five (5) minutes, and keep patient as calm as possible

Trauma

REVISED 2012

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

3. The goal should be to minimize scene time with time critical injuries, including establishing IVs en route.

BASIC CARE GUIDELINES

a) 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

- Consider application of tourniquet if unable to control hemorrhage with direct pressure

ADVANCED CARE GUIDELINES

b) Establish IV and infuse fluids to maintain a systolic pressure of 90 – 100 mmHg for shock.

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

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

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

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 cannot 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

ADVANCED CARE GUIDELINES

h) Monitor EKG and treat dysrhythmias if indicated following the appropriate protocol

i) Refer to Pain Control protocol

IOWA EMS TREATMENT PROTOCOLS

Section 3

Pediatric Treatment Protocols

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Pediatric Initial Care Protocol

REVISED 2013

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
    g) Utilize length/weight based tape to determine appropriate medications and equipment

3. Initial Interventions
    a) Treat airway/breathing problems
    b) Treat circulation problems
    c) Establish IV/IO 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) Obtain vital signs, including blood glucose if available and indicated
    d) 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 en route

Pediatric Airway

REVISED 2012

1.Follow Initial Patient Care Protocol

Breathing spontaneous on initial assessment with adequate ventilation

BASIC CARE GUIDELINES

a) Maintain oxygenation with cannula, mask, or blow-by if oxygen saturations are below 94%, titrate to 94% - 99%

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 attempt to ventilate again

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

a) Attempt endotracheal intubation and try to ventilate the patient

b) If endotracheal intubation is not successful, perform needle cricothyrotomy and needle insufflation

Pediatric Allergic Reaction

REVISED 2012

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Assess airway via Airway Protocol

b) If the patient has a physician prescribed auto-injectable epinephrine assist with administration and monitor for signs of anaphylaxis

ADVANCED CARE GUIDELINES

c) Administer epinephrine 1:1,000 concentration 0.01 mg/kg IM, up to a maximum dose of 0.3 - 0.5 mg

d) Establish IV access

e) Administer diphenhydramine at 1.0 mg/kg IV or deep IM, up to a maximum dose of 50 mg

f) Administer epinephrine 1:10,000 concentration 0.01 mg/kg IV for profound shock , up to a maximum dose of 0.3 - 0.5 mg

g) Administer albuterol 2.5 mg by nebulizer if in respiratory distress

Pediatric Altered Mental Status

REVISED 2012

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Follow Airway Protocol to ensure adequate ventilation

b) Obtain blood glucose

c) Patient conscious- give oral Glucose for children over 2 years of age.

ADVANCED CARE GUIDELINES

d) Establish IV / IO access

If Hypoglycemic

e) Patient unconscious; give Dextrose 0.5-1.0 g/kg slowly IV up to 25 grams

f) Patient unconscious and no IV access; administer Glucagon 0.025 mg/kg IM up to 1 mg maximum

g) Monitor cardiac rhythm

h) If no improvement in level of consciousness after glucose administration give naloxone 0.1 mg/kg IV 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 over 10-15 minutes

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

REVISED 2012

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, 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

Pediatric Asthma

REVISED 2012

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 albuterol 2.5.mg via Nebulizer

e) Administer epinephrine 1:1,000 concentration 0.01 mg/ kg SC or IM up to a maximum dose of 0.3-0.5 mg

Pediatric Burns

REVISED 2013

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 or plastic wrap

f) Do not use any type of ointment, lotion, or antiseptic

g) Do not break blisters

h) Transport according to the Out-of-Hospital Destination Decision Protocol (Appendix B)

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 or NS. For severe burns, administer 20 ml/kg, not to exceed 500 ml.

k) Contact medical control for further fluid administration

l) Treat pain per pain protocol

Pediatric Burns (continued)

Chemical burns

BASIC CARE GUIDELINES

a) Brush off powders prior to flushing. Lint roller may also be used to remove powders prior to flushing

b) 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 according to the Out-of-Hospital Destination Decision Protocol (Appendix B)

ADVANCED CARE GUIDELINES

f) Treat pain per 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) Continue irrigation until advanced personnel take over

c) Attempt to identify contaminant

d) Transport to the most appropriate medical facility

ADVANCED CARE GUIDELINES

e) Treat pain per pain control protocol

Pediatric 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 according to the Out-of-Hospital Destination Decision Protocol (Appendix B)

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) Treat pain per pain control protocol

Pediatric Cardiac Arrhythmia

NEW 2013

1. Follow Initial Care Protocol for Pediatric Patients

IF NO PULSE

BASIC CARE GUIDELINES

a) Perform high quality CPR immediately, apply AED and follow device prompts

ADVANCED CARE GUIDELINES

b) Perform high quality CPR immediately, apply monitor and check rhythm as soon as possible

VENTRICULAR FIBRILLATION OR VENTRICULAR TACHYCARDIA

a) Defibrillate at 2J/kg, immediately resume CPR for two minutes

b) Organize therapies such as rhythm and pulse checks, defibrillation, IV/IO access, medication administration and airway management around two minute cycles of CPR

c) Second defibrillation at 4 J/kg

d) Subsequent defibrillations increasing by 2 J/kg, to a maximum of 10 J/kg, not to exceed maximum adult dose

e) Evaluate for treatable causes

f) Administer epinephrine 1:10,000 according to length/weight based tape every 3-5 minutes

g) Administer amiodarone according to length/weight based tape, may repeat twice

Pediatric Cardiac Arrhythmia

ASYSTOLE/PEA

a) Organize therapies such as rhythm and pulse checks, IV/IO access, medication administration and airway management around two minute cycles of CPR

b) Evaluate for treatable causes

c) Administer epinephrine 1:10,000 according to length/weight based tape every 3-5 minutes as needed

CARDIAC ARRYTHMIAS WITH PULSE

BASIC CARE GUIDELINES

a)Maintain oxygenation with cannula or mask if oxygen saturations are below 94% titrate to 94% - 99%

b) Evaluate for treatable causes

BRADYCARDIA WITH SIGNS OF POOR PERFUSION DESPITE OXYGENTATION AND VENILATION

BASIC CARE GUIDELINES

a) Start CPR if pulse is less than 60 and altered mental status

ADVANCED CARE GUIDELINES

b) Administer epinephrine 1:10,000 according to length/weight based tape every 3-5 minutes

c)Consider administration of atropine according to length/weight based tape

Pediatric Cardiac Arrhythmia

TACHYCARDIA
(RATES GREATER THAN 180 IN CHILDREN OR 210 IN INFANTS)

ADVANCED CARE GUIDELINES

a) If patient unstable:
   i. Perform synchronized cardioversion according to length based tape (consider sedation)

b) If patient stable
   i. Contact medical control

Pediatric Nausea & Vomiting

REVIEWED 2011

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 (Zofran) 0.1 mg/kg IV 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

REVISED 2012

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 maintain oxygenation with cannula, mask or blow-by if oxygen saturations are below 94% titrate to 94% - 99%

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

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

Pediatric Near Drowning (continued)

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

ADVANCED CARE GUIDELINES

p) If abdominal distention arises, consider placing a gastric tube to decompress the stomach if available

q) If the airway cannot be maintained by other means, including attempts at assisted ventilation, or if prolonged assisted ventilation is anticipated

r) 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

s) Initiate cardiac monitoring and determine rhythm. Consult the appropriate protocol for treatment of specific dysrhythmias. Refer to AHA guidelines

t) Obtain vascular access. Administer normal saline at a maintenance rate according to weight

u) 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

REVISED 2012

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 nose

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 nose

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 room air. If no improvement after 30-60 seconds, apply 100% oxygen

g) If ventilation is adequate and the infant displays central cyanosis, administer oxygen at 5 lpm via blow-by. Hold the tubing 1/2 to 1inch from the nose

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:

- 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
   i. epinephrine 1:1000 concentration at 0.1 mg/kg (maximum individual dose 10.0 mg) via endotracheal tube,
   ii. or epinephrine 1:10,000 concentration at 0.01 mg/kg (maximum individual dose 1.0 mg) IV/IO
   iii. Repeat epinephrine at the same dose every 3 to 5 minutes as needed

k) 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

Newborn Resuscitation & Care (continued)

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

REVIEWED 2011

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) Consider administration of pain medications for patients that have significant pain, do not have a decreased level of consciousness, are hemodynamically stable, and have oxygen saturations above 94% 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

REVIEWED 2011

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

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

REVIEWED 2014

1. Follow Initial Patient Care Protocol

Active Seizure

BASIC CARE GUIDELINES

a) Assess airway via Airway Protocol

b) Check blood glucose, if available

ADVANCED CARE GUIDELINES

c) Establish IV access

d) Administer Benzodiazepine, dosage according to length/weight based device, to stop seizure. May repeat dose in 5 minutes if still seizing

e) If blood glucose less than 60 mg/dL give glucose IV/IO, or glucagon IM if no IV access, dosage according to length/weight based device.

Post Seizure

BASIC CARE GUIDELINES

a) Protect airway

b) Check blood glucose, if available

ADVANCED CARE GUIDELINES

c) Establish IV

d) If blood glucose less than 60 mg/dL give glucose IV/IO, dosage according to length/weight based device.

Pediatric Selective Spinal Immobilization

(Previously: Assessment Based Spinal Management

REVISED 2015

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

2. Patient Presentation:

   a)This protocol is intended for patients who present with a traumatic mechanism of injury.

   b)Immobilization is contraindicated for patients who have penetrating trauma who do not have a neurological deficit.

4. Patient Management:

   a) Assessment:

      i. Assess for mental status, neurological deficits, spinal pain, tenderness, any evidence of intoxication, or other severe injuries.

      ii. While maintaining spinal alignment, examine the spine for tenderness on palpation or deformities.

   b) Treatment and Interventions:

      i. Apply cervical restriction if there is any of the following:

         1. Patient complains of neck pain.

         2. Any neck tenderness of palpation.

         3. Any abnormal mental status, including extreme agitation, or neurological deficit.

         4. Any evidence of alcohol or drug intoxication

         5. There are other severe or painful injuries present.

         6. Any communication barrier that prevents accurate assessment.

Pediatric Selective Spinal Immobilization (continued)

ii. Immobilize Patient with cervical collar and a long spine board, full body vacuum splint, scoop stretcher, or similar devise if:

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

Note 1: Distracting injuries or altered mental status does not necessitate long spine board use.

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

Pediatric Shock

REVISED 2012

1. Follow Initial Patient Care Protocol

BASIC CARE GUIDELINES

a) Assess airway via Airway Protocol

b) Assess circulation and perfusion

c) Control external bleeding

d) Assess mental status

e) Expose the child only as necessary to perform further assessments. Maintain the child's body temperature throughout the examination

f) 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

g) Initiate cardiac monitoring

h) 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

i) Administer a fluid bolus of normal saline at 20 ml/kg over 10 to 15 minutes. 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

REVIEWED 2011

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

REVISED 2012

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

3. The goal should be to minimize scene time with time critical injuries, including establishing IVs en route.

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) Cardiac monitor

Pediatric Trauma (continued)

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

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

Establish and maintain manual spinal immobilization

a) 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

b) Continue manual stabilization, apply a rigid cervical collar, and immobilize the patient on a long backboard or similar device

c) 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

d) Reassess vitals, GCS and pupillary response frequently

IOWA EMS TREATMENT PROTOCOLS

Section 4

Appendices

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Appendix A

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.[i] 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).

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 B

Revised 2014

Adult Out Of Hospital Trauma Triage Destination Decision Protocol

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 ≤13
- Respiratory rate <10 or >29 breaths per minute, or need for ventilatory support.
- Systolic B/P (mmHg) less than <90 mmHg

If ground transport time to a Resource (Level I) or Regional (Level II) Trauma Care Facility 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) Trauma Care Facility, 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 injuries to head, neck, torso and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g., flail chest)
- Suspected two or more proximal long-bone fractures
- Suspected pelvic fractures
- Crushed, degloved, mangled, or pulseless extremity
- Open or depressed skull fracture
- Amputation proximal to wrist or ankle
- Paralysis or Parasthesia
- Partial or full thickness burns > 10% TBSA or involving face/airway

If ground transport time to a Resource (Level I) or Regional (Level II) Trauma Care Facility 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) Trauma Care Facility, 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. (one story is equal to 10 feet)
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
- High-risk auto crash:
  - Interior compartment intrusion, including roof: Motorcycle crash >20 mph,
  - >12 inches occupant site; >18 inches any site
  - Ejection (partial or complete) from automobile
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with high risk of injury

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:

- Older adults
- Risk of injury/death increases after age 55 years
- SBP<110 might represent shock after age 65 years
- EMS provider judgment
- Low impact mechanisms (e.g. ground level falls) might result in severe injury
- ETOH/Drug use
- Pregnancy > 20 weeks
- Anticoagulants and bleeding disorders
  - Patients with head injury are at high risk for rapid deterioration

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:

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

(April 2013)

Appendix B

Revised 2014

Pediatric Out Of Hospital Trauma Triage Destination Decision Protocol

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. **V**erbal, **P**ain, or **U**nresponsive 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.

Glasgow Coma Score ≤13

If ground transport time to a Resource (Level I) or Regional (Level II) Trauma Care Facility 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) Trauma Care Facility, 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 injuries to head, neck, torso and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g., flail chest)
- Suspected two or more proximal long-bone fractures
- Suspected pelvic fractures
- Crushed, degloved, mangled, or pulseless extremity
- Open or depressed skull fracture
- Amputation proximal to wrist or ankle
- Paralysis or Parasthesia
- Partial or full thickness burns > 10% TBSA or involving face/airway

If ground transport time to a Resource (Level I) or Regional (Level II) Trauma Care Facility 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) Trauma Care Facility, 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 >10 feet or two times the height of the child
- High-risk auto crash
  - —Interior compartment intrusion, including roof: >12 inches occupant site;
  - —>18 inches any site
  - —Ejection (partial or complete) from automobile
  - —Death in same passenger compartment
  - —Vehicle telemetry data consistent with high risk of injury
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
- Motorcycle crash >20 mph

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:

- Pregnancy > 20 weeks
- Anticoagulants and bleeding disorders
  - —Patients with head injury are at high risk for rapid deterioration
- EMS provider Judgment
- ETOH/Drug use

Transport to the nearest **(Any 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:

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

(April 2013)

Appendix C

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 D

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 E

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.

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 and Paramedic levels.

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/Paramedic 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 on next page.
  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 PS/Paramedic 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

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 G

Strategies for Reperfusion Therapy: Acute Stroke

(NEW 2012)

Reperfusion Therapy Screening Not Limited to Paramedic Level

This appendix should be used for suspected acute stroke. This tool will be used to triage patients to the appropriate receiving facility, and provide a template for passing information to the receiving facility.

1. Perform a Cincinnati pre-hospital stroke screen (or other reproducible stroke assessment).
2. If assessment is positive for stroke, and onset of symptoms can be established within the past 4.5 hours, then determine the appropriate destination:
    a. If transport time to a Primary Stroke Center is less than 30 minutes, it is recommended that all of these patients be transported directly to the Primary Stroke Center
    b. If transport time to a Primary Stroke Center is greater than 30 minutes, then transport to the nearest stroke capable hospital.
3. Consider the use of air transport if it will facilitate the arrival of the acute stroke patient for treatment within 4.5 hours to a Primary Stroke Center or stroke capable hospital.
4. If transport to a Primary Stroke Center or stroke capable hospital cannot be achieved to arrive within 4.5 hours, then transport to the closest appropriate facility.
5. In all instances, those patients requiring immediate hemodynamic or airway stabilization should be transported to the closest appropriate facility.
6. Complete the fibrinolytic checklist on next page.

Primary Stroke Center – hospitals that have been certified by the Joint Commission on Hospital Accreditation or an equivalent agency to meet Brain Attack Coalition and American Stroke Association guidelines for stroke care

Stroke capable hospital – hospitals that have the following:

- *rt-PA readily available for administration*
- *Head CT, laboratory and EKG capabilities 24/7*
- *Process in place for transporting appropriate patients to a Primary Stroke Center*
- *Stroke protocol in place that follows American Stroke Association guidelines*
- *Emergency department coverage by physician, or advanced practitioner*

The list of Iowa Hospital Triage Destinations is available on the Iowa Hospital Association web site at:
http://www.ihconline.org/UserDocs/Pages/Iowa_Hospital_Stroke_Triage_System.pdf

If directed by medical control, complete fibrinolytic checklist below

Appendix G

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 H

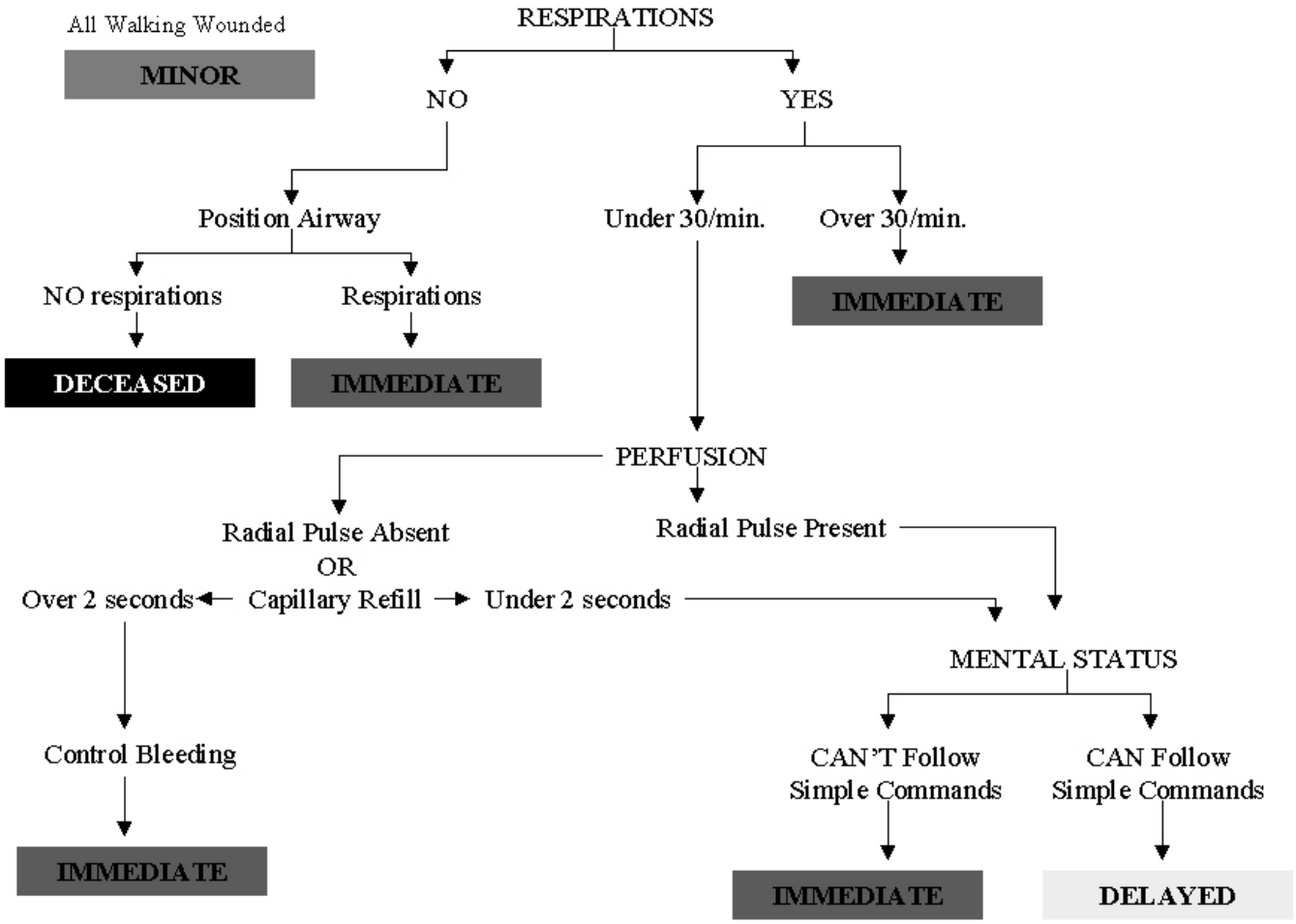
Simple Triage and Rapid Treatment

S T A R T

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.

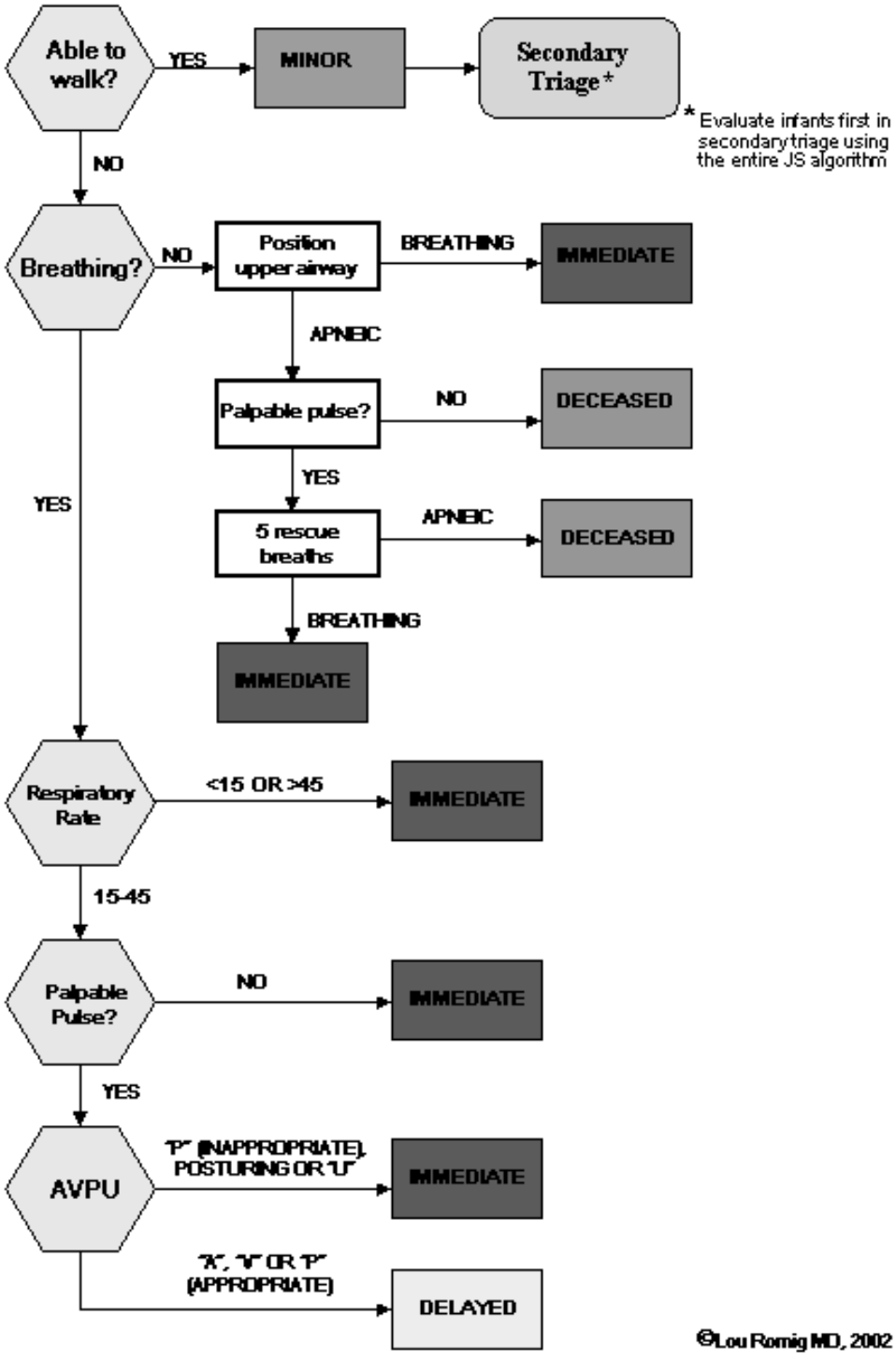
Respirations
Perfusion
Mental Status

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



Appendix I

Pediatric JumpSTART



Appendix J

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 K

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 L

EMS APPROVED ABBREVIATIONS

ā	before
ABC	airway, breathing, circulation
ALS	advanced life support
AMI	acute myocardial infarction
amps	ampules
ASA	aspirin
AT	atrial tachycardia
AV	atrioventricular
bicarb	sodium bicarbonate
BID	twice a day
BLS	basic life support
BP	blood pressure
BS	blood sugar
C̄	with
CAD	coronary artery disease
CC	chief complaint
cc	cubic centimeter
CCU	coronary care unit
CHB	complete heart block
CHF	congestive heart failure
cm	centimeter
CNS	central nervous system
c/o	complains of
CO	carbon monoxide
C02	carbon dioxide
COPD	chronic obstructive pulmonary disease
CPR	cardiopulmonary resuscitation
CSF	cerebral spinal fluid
CVA	cerebral vascular accident
D/C	discontinue
DOA	dead on arrival
D5W	5% dextrose in water
Dx	diagnoses
ED	emergency department
EKG/ECG	electrocardiogram
Epi	epinephrine
ER	emergency room
ET	endotracheal
ETOH	alcohol
fib	fibrillation
fl	fluid
fx	fracture
GI	gastrointestinal
gm	gram
gr	grain
gt(t)	drop(s)
h,hr	hour
hx	history
ICU	intensive care unit
IM	intramuscular
IV	intravenous
Kg	kilogram
KVO	keep vein open
L	liter
LOC	level of consciousness
LR	lactated ringers
*M*gtt	microdrip
MD	medical doctor
mEq	milliequivalents
mg	milligram
MI	myocardial infarction
min	minute
ml	milliliter
mm	millimeter
MS	morphine sulfate
NaCl	sodium chloride
NaHCO3	sodium bicarbonate
NG,N/G	nasogastric
nitro	nitroglycerine
NPO	nothing by mouth
NS	normal saline
NSR	normal sinus rhythm
NTG	nitroglycerine
0_2	oxygen
OB	obstetrics
OD	overdose
OR	operating room
P	pulse
p	after
PAC	premature atrial contraction
PAT	paroxysmal atrial tachycardia
PCR	patient care record
PE	physical exam, pulmonary edema
pedi	pediatric
	PERLpupils equal, reactive to light
PJC	premature junctional
po	by mouth
pr	per rectum
prn	whenever necessary, as needed
PVC	premature ventricular contraction
q	every
QID	four times a day
R	respirations
R/O	rule out
RN	registered nurse
Rx	treatment
s̄	without
SC	subcutaneous
Sec	second
SL	sublingual
SOB	shortness of breath
SQ	subcutaneous
STAT	immediately
s/s	sign, symptoms
SVT	supraventricular tachycardia
Sx	symptoms
TIA	transient ischemic attack
TID	three times a day
TKO	to keep open
VF	ventricular fibrillation
w/s	watt second setting
x	times
y/o	years old

Appendix M

Guidelines for New Protocol Development

A rational decision making process*

Can also 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 operation?
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.