IOWA COUNTY EMS

TRANSPORT & NON-TRANSPORT

PATIENT CARE PROTOCOLS

(ADULT & PEDIATRIC)

To Provide the Best Care Possible to Those We Serve

Iowa County Ambulance Service
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Service Director

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Service Medical Director

Jason D. Schott
Field Supervisor

In Partnership With Marengo Memorial Hospital
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Iowa County EMS Treatment Protocols

Section 1

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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 EMS 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](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](http://www.idph.state.ia.us/ems/scope_of_practice.asp)

Contact information for the Bureau of EMS staff is available at [http://www.idph.state.ia.us/ems/staff.asp](http://www.idph.state.ia.us/ems/staff.asp)
Protocols Authorization

This authorization page allows for one or multiple service approval by the same physician medical director. Print or type each service name, select type and level of authorization. The service physician medical director must approve the protocol in accordance with the authorized level of service.

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.

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.

<table>
<thead>
<tr>
<th>SERVICE TYPE</th>
<th>Ambulance</th>
<th>X</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nontransport</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL OF AUTHORIZATION</th>
<th>First Responder/EMR</th>
<th>X</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EMT-B/EMT</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>EMT-I</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AEMT</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMT-P</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMT-P/CCT (attach protocols)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PS/Paramedic</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PS/Paramedic/CCT (attach protocols)</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

| SKILL (Mark the column that corresponds with the service if the skill will be approved) | MINIMUM LEVEL | |
|-----------------------------|-----------------|---|---|---|---|---|
| King airway                 | FR, EMR         | X | X | X | X | X |
| Pulse oximetry              | EMR             | X | X | X | X | X |
| Esophageal/tracheal double-lumen airway | EMT-B | X | X | X | X | X |
| IV maintenance              | EMT-B           | X | X | X | X | X |
| Glucose monitor             | EMT-B, EMT      | X | X | X | X | X |
| Service stocks the auto-inject epi | EMT-B, EMT | X | |
| CPAP                        | EMT, AEMT       | X | | | | |
| Gastric tube-OG/NG          | EMT-P           | X | | | | |
| Intraosseous insertion      | AEMT, EMT-P     | X | | | | |
| Needle Chest Decompression  | EMT-P           | X | | | | |
| Chiricothyotomy- percutaneous | EMT-P   | X | | | | |
| Assessment-based spinal immobilization | EMT-P | X | | | | |
| Endotracheal intubation-nasal | EMT-P | X | | | | |
| Rapid Sequence Induction (attach protocol) | PS | | | | | |
| Thrombolytics (attach protocol) | PS | | | | | |

<table>
<thead>
<tr>
<th>Iowa County Ambulance</th>
<th>Annawa &amp; Kinze QRS</th>
<th>Ladora QRS</th>
<th>Millersburg &amp; North Emsell QRS</th>
<th>Panama &amp; Victor QRS</th>
<th>Williamsburg QRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Protocol Revision

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

<table>
<thead>
<tr>
<th>PAGE</th>
<th>PROTOCOL NAME</th>
<th>CHANGES MADE (may attach copies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>Authorized Drug List</td>
<td>(Removed ; LR, Geodon, Lidocaine, Magnesium Sulfate, Procainamide, Sodium Bicarbonate Thiamin, Verapamil) (Added: DuoNeb, Etomidate, Hurricane Spray)</td>
</tr>
<tr>
<td>9</td>
<td>ACS</td>
<td>(MS 2-4mg STEMI, UA/NSTEMI added Fentanyl)</td>
</tr>
<tr>
<td>12</td>
<td>Allergic Reaction</td>
<td>(Diphenhydramine IV/IM, DuoNeb, EPI 0.3-0.5mg IM)</td>
</tr>
<tr>
<td>13</td>
<td>Altered Mental Status</td>
<td>(Narcan 1-2mg)</td>
</tr>
<tr>
<td>16</td>
<td>Breathing Difficulty</td>
<td>(AddedO2 94-99%, DuoNeb or Albuterol)</td>
</tr>
<tr>
<td>17</td>
<td>Behavioral Emergencies</td>
<td>(Added wording for restraint use, Ativan replaces Geodon)</td>
</tr>
<tr>
<td>19</td>
<td>Burns</td>
<td>(NS replaces LR, EKG for electrical burns)</td>
</tr>
<tr>
<td>22</td>
<td>Childbirth</td>
<td>(Added more delivery instructions)</td>
</tr>
<tr>
<td>23</td>
<td>CHF</td>
<td>(May repeat NTGx2 if BP above 90mmHg, MS 1-2mg as needed)</td>
</tr>
<tr>
<td>25</td>
<td>Frostbite</td>
<td>(Consider hypothermia, obtain temperature)</td>
</tr>
<tr>
<td>26</td>
<td>Heat Illness</td>
<td>(Obtain temperature)</td>
</tr>
<tr>
<td>27</td>
<td>Hypothermia</td>
<td>(Add hot packs to neck/groin/axilla, monitor EKG)</td>
</tr>
<tr>
<td>29</td>
<td>Pain Control</td>
<td>(Added max 10mg MS and 200 mcg Fentanyl, MAD, 94% &amp; 90mmHg)</td>
</tr>
<tr>
<td>32</td>
<td>Seizure</td>
<td>(Added Versed max 10mg)</td>
</tr>
<tr>
<td>33</td>
<td>Sexual Assault</td>
<td>(Items should be placed separately in paper bags if available)</td>
</tr>
<tr>
<td>34</td>
<td>Stroke</td>
<td>(Obtain IV access, EKG, 12-Lead)</td>
</tr>
<tr>
<td>35</td>
<td>Trauma</td>
<td>(Added reference to Appendix B, PetCO2 35-45, EKG)</td>
</tr>
<tr>
<td>43</td>
<td>Ped Allergic Reaction</td>
<td>(Changed EPI 1:1000 IM, Consider IV/IO access)</td>
</tr>
<tr>
<td>46</td>
<td>Ped Asthma</td>
<td>(Removed SQ option for EPI)</td>
</tr>
<tr>
<td>47</td>
<td>Ped Burns</td>
<td>(NS replaces LR, Monitor EKG)</td>
</tr>
<tr>
<td>57</td>
<td>Ped Pain Control</td>
<td>(Added IM/MAD pain control routes, SaO2 94%, BP 90mmHg)</td>
</tr>
<tr>
<td>59</td>
<td>Ped Seizure</td>
<td>(Changed dose, Dextrose 25% up to 2.5 grams)</td>
</tr>
<tr>
<td>62</td>
<td>Ped Trauma</td>
<td>(Added reference to appendix B)</td>
</tr>
<tr>
<td>82</td>
<td>Appendix</td>
<td>Added N-FF</td>
</tr>
</tbody>
</table>

SERVICE NAME Iowa County Ambulance & All Iowa County ORS Services Listed Above

PHYSICIAN MEDICAL DIRECTOR __________________________ 5/1/13

Signature Date
Drugs listed on this page are those referenced in the protocols. Medical Directors may add, delete, and/or substitute drugs as appropriate for their service program. Additional drugs, such as those from current AHA/ACLS guidelines, may be added by the service program medical director. Staff training must be documented and on file.

<table>
<thead>
<tr>
<th>Basic</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen</td>
<td>Adenosine</td>
</tr>
<tr>
<td>Aspirin</td>
<td>Amiodarone</td>
</tr>
<tr>
<td>Activated Charcoal</td>
<td>Albuterol</td>
</tr>
<tr>
<td>Glucose Paste</td>
<td>Ativan (Lorazepam)</td>
</tr>
<tr>
<td>Patient assisted inhaler</td>
<td>Atropine</td>
</tr>
<tr>
<td>Patient assisted Epi-Pen</td>
<td>Benadryl (diphenhydramine)</td>
</tr>
<tr>
<td>Patient assisted Nitroglycerin</td>
<td>Dextrose</td>
</tr>
<tr>
<td></td>
<td>Dopamine</td>
</tr>
<tr>
<td></td>
<td>DuoNeb</td>
</tr>
<tr>
<td></td>
<td>Epinephrine</td>
</tr>
<tr>
<td></td>
<td>Etomidate</td>
</tr>
<tr>
<td></td>
<td>Fentanyl</td>
</tr>
<tr>
<td></td>
<td>Glucagon</td>
</tr>
<tr>
<td></td>
<td>Hurricane Spray</td>
</tr>
<tr>
<td></td>
<td>Morphine Sulfate</td>
</tr>
<tr>
<td></td>
<td>Narcan (naloxone)</td>
</tr>
<tr>
<td></td>
<td>Nitroglycerin</td>
</tr>
<tr>
<td></td>
<td>Normal Saline</td>
</tr>
<tr>
<td></td>
<td>Romazicon (flumazenil)</td>
</tr>
<tr>
<td></td>
<td>Valium (diazepam)</td>
</tr>
<tr>
<td></td>
<td>Versed (Midazolam)</td>
</tr>
<tr>
<td></td>
<td>Zofran (ondansetron)</td>
</tr>
</tbody>
</table>

**SERVICE NAME** Iowa County Ambulance & All Iowa County QRS Services Listed Above

**PHYSICIAN MEDICAL DIRECTOR** ____________________________ 5/1/13

Signature

Date
IOWA EMS TREATMENT PROTOCOLS

Section 2
Adult Treatment Protocols

Initial Patient Care Protocol
Abdominal Pain
Acute Coronary Syndrome
Airway
Allergic Reaction
Altered Mental Status
Amputated Part
Apparent Death
Breathing Difficulty
Behavioral Emergencies
Burns
Cardiac Arrest
Childbirth
Congestive Heart Failure
Frostbite
Heat Illness
Hypothermia
Nausea & Vomiting
Pain Control
Poisoning
Seizure
Sexual Assault
Stroke
Trauma
Initial Patient Care Protocol

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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 EtCO₂ monitor if available and indicated
   f) Treat pain or nausea if present

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

<table>
<thead>
<tr>
<th>BASIC CARE GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Give nothing by mouth</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADVANCED CARE GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Consider a fluid bolus if indicated.</td>
</tr>
<tr>
<td>c) Evaluate the need for pain and nausea control</td>
</tr>
</tbody>
</table>
Acute Coronary Syndrome

REVISED 2013

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 (4) 81mg ASA. If pt has already taken ASA in the last 12 hours this amount may be reduced so long as pt has received 324mg.

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 (patients 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 F (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 2-4 mg IV every 5 minutes titrated to pain relief and vitals remain stable
   - May consider Fentanyl as an alternative or as directed by medical control

OR

- **UA/NSTEMI** – Morphine 1-5 mg IV given once
- May consider Fentanyl as an alternative or as directed by medical control
Airway

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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
Allergic Reaction

REVISED 2012

1) Follow Initial Patient Care Protocol

**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 maximum dose of 0.3 to 0.5 mg, may repeat x1 if needed

c) Administer diphenhydramine 25 – 50 mg IV/IM

d) (DuoNeb) Albuterol 2.5mg & Atrovent 0.5mg in 3cc NS by nebulizer over 8LPM O2 if respiratory distress. May repeat DuoNeb or Albuterol 2.5mg in 3cc as needed

e) Evaluate need for early intubation if severe anaphylaxis
Altered Mental Status

1. Follow Initial Patient Care Protocol

**BASIC CARE GUIDELINES**

a) Obtain blood glucose

b) If blood sugar is less than 80 mg/dl, pt is 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 0.4-2 mg IV/IM/MAD. If no response may repeat in 3 minutes

f) Evaluate the need for intubation
Amputated Part

1. Follow Initial Patient Care Protocol

2. Follow Trauma Protocol if indicated

**BASIC CARE GUIDELINES**

a) Locate amputated part if possible

b) Wrap amputated part in saline moistened gauze

c) Place wrapped amputated part in empty plastic bag

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

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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:

<table>
<thead>
<tr>
<th>BASIC CARE GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) The county Medical Examiner and law enforcement shall be contacted</td>
</tr>
<tr>
<td>b) Where possible, contact Iowa Donor Network at 800-831-4131. See Protocol Appendix J</td>
</tr>
<tr>
<td>c) At least one EMS provider should remain at the scene until the appropriate authority is present</td>
</tr>
<tr>
<td>d) Provide psychological support for grieving survivors</td>
</tr>
<tr>
<td>e) Document the reason(s) no resuscitation was initiated</td>
</tr>
<tr>
<td>f) Preserve the crime scene if present</td>
</tr>
<tr>
<td>g) In all other circumstances (except where “NO CPR/DNR” protocol applies; see appendix B) full resuscitation must be initiated</td>
</tr>
</tbody>
</table>
Breathing Difficulty  
(Obstructed Airway, Stridor, Wheezing) 

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  

b) Administer oxygen, titrate oxygen saturations to 94-99%  

**ADVANCED CARE GUIDELINES** 

c) (DuoNeb) Albuterol 2.5mg & Atrovent 0.5mg in 3cc NS by nebulizer over 8LPM O2. May repeat DuoNeb or Albuterol 2.5mg in 3cc as needed  

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

e) Evaluate the need for CPAP, if available  

f) Evaluate the need for intubation
1. Follow Initial Patient Care Protocol

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

**BASIC CARE GUIDELINES**

   b) Consider medical or traumatic causes of behavior problems

   c) Keep environment calm

   d) If physical restraints are needed, involve the use of law enforcement wherever possible. If law enforcement is unavailable or unwilling to assist; Soft Restraints may be used on medical control order only. If the situation does not allow prior authorization from medical control, contact should be made as soon as possible following application of the restraints. Documentation should include necessity for the restraints and pulse, motor and sensation shall be checked frequently.

**ADVANCED CARE GUIDELINES**

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

   f) For excited delirium, consider a benzodiazepine such as Ativan 1-2mg IV, IM or MAD. Max does 4mg
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**

a) Establish an IV of LR or NS. For severe burns, administer 500 ml bolus Contact medical control for further fluid administration instructions
b) Refer to Pain Control protocol
c) Transport to the Out-of-Hospital- Trauma Destination Protocol (Appendix B)
Burns (continued)

Chemical Burns

<table>
<thead>
<tr>
<th>BASIC CARE GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Attempt to identify contaminant</td>
</tr>
<tr>
<td>b) Brush off powders prior to flushing. Lint roller may also be used to remove powders prior to flushing</td>
</tr>
<tr>
<td>c) Immediately begin to flush with large amounts of water</td>
</tr>
<tr>
<td>d) Continue flushing the contaminated area when en route to the receiving facility</td>
</tr>
<tr>
<td>e) Do not contaminate uninjured areas while flushing</td>
</tr>
<tr>
<td>f) Transport to the Out-of-Hospital- Trauma Destination Protocol (Appendix B)</td>
</tr>
<tr>
<td>g) Estimate percent of body surface area injured and estimate the depth of burn as superficial, partial thickness or full thickness</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>ADVANCED CARE GUIDELINES</th>
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<tbody>
<tr>
<td>h) Refer to Pain Control protocol</td>
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Toxin in Eye

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>a) Attempt to identify contaminant</td>
</tr>
<tr>
<td>b) Flood eye(s) with lukewarm water and have patient blink frequently during irrigation. Use caution to not contaminate other body areas</td>
</tr>
<tr>
<td>c) Transport to the Out-of-Hospital- Trauma Destination Protocol (Appendix B)</td>
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</tbody>
</table>

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<thead>
<tr>
<th>ADVANCED CARE GUIDELINES</th>
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<tbody>
<tr>
<td>d) Establish a large bore IV if indicated and infuse as patient condition warrants</td>
</tr>
<tr>
<td>e) Refer to Pain Control protocol</td>
</tr>
</tbody>
</table>
## Electrical Burns

### BASIC CARE GUIDELINES

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

b) Treat for shock if indicated  

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

### ADVANCED CARE GUIDELINES

d) Refer to Pain Control protocol  

e) Monitor EKG
Cardiac Arrest

REVISED 2013

1. Follow Initial Patient Care Protocol

**BASIC CARE GUIDELINES**

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

b) If an automated CPR device is available, providers should follow the manufactures recommendations for proper use of the device unless directed otherwise by medical control

**APPENDIX EE**

(PAGE 138)

**ADVANCED CARE GUIDELINES**

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

**APPENDIX EE**

(PAGE 138)
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) Clamp, tie and cut umbilical cord (between the clamps) as pulsations cease approximately 4 fingers width from infant

d) Observe for delivery of placenta while preparing mother and infant for transport.

e) Gently massage mother’s lower abdomen until it becomes firm.

f) 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 may repeat x2 if needed and blood pressure remains above 90 mmHg

q) May consider, administering Morphine Sulfate 1-2mg IVP every 5 minutes as needed until one of the following is present: relief of pain, hypotension develops, respiratory depression occurs, CNS depression results, 10mg total has been given
Frostbite

REVIEWED 2011

1. Follow Initial Patient Care Protocol

<table>
<thead>
<tr>
<th>BASIC CARE GUIDELINES</th>
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<tbody>
<tr>
<td>a) Remove the patient from the cold environment</td>
</tr>
<tr>
<td>b) Protect the cold injured extremity from further injury (manual stabilization)</td>
</tr>
<tr>
<td>c) Remove wet or restrictive clothing</td>
</tr>
<tr>
<td>d) Do not rub or massage</td>
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<tr>
<td>e) Do not re-expose to the cold</td>
</tr>
<tr>
<td>f) Remove jewelry</td>
</tr>
<tr>
<td>g) Cover with dry clothing or dressings</td>
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<tr>
<td>h) Obtain temperature</td>
</tr>
<tr>
<td>i) Consider Hypothermia</td>
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<table>
<thead>
<tr>
<th>ADVANCED CARE GUIDELINES</th>
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</thead>
<tbody>
<tr>
<td>j) Establish IV access at a TKO rate. Use warmed IV fluid if possible</td>
</tr>
<tr>
<td>k) Refer to pain control protocol</td>
</tr>
</tbody>
</table>
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

h) Obtain temperature

**ADVANCED CARE GUIDELINES**

i) Monitor EKG and treat dysrhythmias following the appropriate protocol(s)
1. Follow Initial Patient Care Protocol

<table>
<thead>
<tr>
<th>BASIC CARE GUIDELINES</th>
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</thead>
<tbody>
<tr>
<td>a) Remove wet clothing</td>
</tr>
<tr>
<td>b) If able, check core temperature</td>
</tr>
<tr>
<td>c) Handle patient very gently</td>
</tr>
<tr>
<td>d) Add hot packs to neck, groin and axilla</td>
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<tr>
<td>e) Cover patient with blankets</td>
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<table>
<thead>
<tr>
<th>ADVANCED CARE GUIDELINES</th>
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</thead>
<tbody>
<tr>
<td>f) Administer warm IV fluids if available, do not administer cold fluids</td>
</tr>
<tr>
<td>g) Monitor EKG</td>
</tr>
</tbody>
</table>
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
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/ IM or MAD if no IV access, repeated in 5 min to a maximum of 10 mg on standing order AND/OR
   - Fentanyl 25 to 50 mcg IV/ IM or MAD if no IV access, every 5 minutes as needed to a maximum of 200 mcg

c) Administer narcan 0.4-2 mg IV for respiratory depression from narcotics. May repeat once if needed

d) For severe pain consider anxiolytic medication
   - Midazolam (Versed) 0.5-2.5 mg IV / IM/ MAD repeated every 5 minutes as needed to a maximum of 5 mg OR
   - Diazepam (Valium) 2-5 mg IV / IM/ MAD repeated every 5 minutes as needed to a maximum of 10 mg OR
   - Lorazepam (Ativan) 1-2mg IV/ IM/ MAD, 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 94%, or blood pressure drops to 90 mmHg or less, administration of narcotic medication must stop.
Poisoning

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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
Seizure

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1. Follow Initial Patient Care Protocol

Active seizure

<table>
<thead>
<tr>
<th>BASIC CARE GUIDELINES</th>
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</thead>
<tbody>
<tr>
<td>a) Protect airway</td>
</tr>
<tr>
<td>b) Check blood glucose level, if available, and treat hypoglycemia if present</td>
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</table>

<table>
<thead>
<tr>
<th>ADVANCED CARE GUIDELINES</th>
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<tbody>
<tr>
<td>c) Administer Valium titrate 2 mg IV push or MAD until seizure stops or maximum dose of 10 mg is given OR Administer Ativan 1 mg IV push or MAD, titrating 1 mg at a time until the seizure stops or until maximum dose of 4 mg is given OR Administer Versed 1mg IV push or MAD, titrate 1mg at a time until the seizure stops or until a maximum dose of 10mg is given.</td>
</tr>
</tbody>
</table>

Post seizure

<table>
<thead>
<tr>
<th>BASIC CARE GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Protect airway</td>
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</table>

<table>
<thead>
<tr>
<th>ADVANCED CARE GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Check blood sugar and treat hypoglycemia if present</td>
</tr>
<tr>
<td>c) Be prepared to treat repeated seizures</td>
</tr>
</tbody>
</table>
1. Follow Initial Patient Care Protocol

**BASIC CARE GUIDELINES**

a) Contact local law enforcement if not present

b) Identify yourself to the patient, assure patient that they are safe and in no further danger

c) Do not burden patient with questions about the details of the crime; you are there to provide emergency medical care

d) Be alert to immediate scene and document what you see. Touch only what you need to touch at the scene

e) Do not disturb any evidence unless necessary for treatment of patient. (If necessary to disturb evidence, document why and how it was disturbed.)

f) 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" Items should be placed individually in separate paper bags if available.

g) Treat other injuries as indicated

h) Treat for shock if indicated
A. Follow Initial Patient Care Protocol

### BASIC CARE GUIDELINES

a) Perform a “FAST” Cincinnati Prehospital Stroke Scale - checking facial droop, arm drift, speech, and time of onset. Notify receiving facility as soon as possible if stroke is suspected

b) If Stroke Screening is positive expedite transport to the hospital

c) Obtain blood glucose if available

d) Refer to Appendix G (Reperfusion Strategies)

### ADVANCED CARE GUIDELINES

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

   1) 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

g) Obtain IV access and set rate to TKO

h) Obtain EKG
Trauma

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1. Follow Initial Patient Protocol for all patients


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.

c) Monitor EKG

**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 35 – 45 mmHg if available

i) Monitor EKG
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

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

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

3. Initial Interventions
   a) Treat airway/breathing problems
   b) Treat circulation problems
   c) Establish IV/IO access if indicated
   d) Treat pain or nausea
   e) Apply cardiac monitor
   f) Utilize length/weight based tape to determine appropriate medications and equipment

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 en route 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

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 1:1,000 0.01 mg/kg IM 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
- h) Consider IV/IO access
Pediatric Altered Mental Status

REVISED 2012

1. Follow Initial Patient Care Protocol

<table>
<thead>
<tr>
<th>BASIC CARE GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Follow Airway Protocol to ensure adequate ventilation</td>
</tr>
<tr>
<td>b) Obtain blood glucose</td>
</tr>
<tr>
<td>c) Patient conscious- give oral Glucose for children over 2 years of age.</td>
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<tr>
<th>ADVANCED CARE GUIDELINES</th>
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</thead>
<tbody>
<tr>
<td>d) Establish IV / IO access</td>
</tr>
</tbody>
</table>

**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 Narcan 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 |
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, see appendix A) full resuscitation must be initiated
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 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**

- a) Establish an IV of LR or NS. For severe burns, administer 20 ml/kg, not to exceed 500 ml.
- b) Contact medical control for further fluid administration
- c) Treat pain per pain protocol
Chemical burns

**BASIC CARE GUIDELINES**

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

b) Immediately begin to flush with large amounts of water. Continue flushing the contaminated area when en route to the receiving facility

c) Do not contaminate uninjured areas while flushing

d) Attempt to identify contaminant

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

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

**ADVANCED CARE GUIDELINES**

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

**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 to the most appropriate medical facility
d) Estimate percent of body surface area injured and estimate the depth of burn as superficial, partial thickness or full thickness

ADVANCED CARE GUIDELINES

e) Treat pain per pain control protocol
f) Monitor EKG
Pediatric Cardiac Arrest

REVISED 2013

1. Follow Initial Patient Care Protocol

**BASIC CARE GUIDELINES**

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

b) If an automated CPR device is available, providers should follow the manufactures recommendations for proper use of the device unless directed otherwise by medical control

**APPENDIX EE**

(PAGE 145)

**ADVANCED CARE GUIDELINES**

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

**APPENDIX EE**

(PAGE 145)
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. If condition is critical, initiate transport as quickly as possible.
Pediatric Near Drowning (continued)

ADVANCED CARE GUIDELINES

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

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

q) Perform sedatives and paralytic agents, to aid with intubation as permitted by medical direction. Confirm placement of endotracheal tube using clinical assessment and end-tidal CO2 monitoring as per medical direction

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

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

t) If the child’s condition is critical or unstable, initiate transport as quickly as possible. Perform focused history and detailed physical examination en route to the hospital if patient status and management of resources permit
Newborn Resuscitation & Care

REVISED 2013

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 15 lpm via blow-by. Hold the tubing 1/2 to 1 inch 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 1.0 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 IV/IM/MAD
- Fentanyl 1.0 mcg/kg (maximum individual dose 200 mcg) via IV/IM/MAD

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 94%
  - blood pressure drops to 90 mmHg or less

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

1. Follow Initial Patient Care Protocol

2. Identify contaminate and call Poison Control and follow directions given to provide care: 1-800-222-1222

3. Contact Medical Direction as soon as possible with information given by Poison Control and care given

BASIC CARE GUIDELINES

**Ingested Poisons**

a) Identify and estimate amount of substance ingested

**Inhaled Poisons:**

a) Remove patient to fresh air

b) Administer high flow oxygen

c) Estimate duration of exposure to inhaled poison

**Absorbed Poisons**

a) If it will be a hazard to you, use protective clothing and extreme caution

**Injected Poisons**

a) Be alert for respiratory difficulty. Maintain airway and give high flow oxygen

b) Check patient for marks, rashes, or welts
Pediatric Seizure

1. Follow Initial Patient Care Protocol

**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 IV Benzodiazepine to stop seizure. May repeat dose in 5 minutes if still seizing

e) If blood glucose less than 60 mg/dL give IV glucose or glucagon IM if no IV access

**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 administer Dextrose 25% slow IVP up to 25 grams
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

1. Follow Initial Patient Care Protocol

**BASIC CARE GUIDELINES**

a) Approach child slowly to establish rapport (except in life-threatening situations), then perform exam

b) Treat obvious injuries according to appropriate protocol

c) Genital exam only if indicated in the presence of blood, known or obvious injury and or trauma

d) Interview parents separate from child, if possible

e) Transport if permitted by parents

f) If parents do not allow transport, notify law enforcement for assistance

g) Communicate vital information only – additional info can be given to attending RN and/or Physician on arrival

h) Record observations and factual information on run report

i) Report all suspected abuse to the National hotline at 1-800-362-2178 within 24 hours of your contact of the patient. This will be an oral report only

j) Within 48 hours of oral reporting, you must submit a written report for all suspected abuse to the Department of Human Services
Pediatric Trauma

1. Follow Initial Patient Care Protocol

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

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
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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. 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
Out of Hospital Trauma Triage Destination Decision Protocol

IOWA’S TRAUMA SYSTEM

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**

<table>
<thead>
<tr>
<th>Glasgow Coma Score &lt;14</th>
<th>Respiratory diff./rate &lt;10 or &gt;29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Rate &gt;120</td>
<td>Systolic B/P &lt;90</td>
</tr>
</tbody>
</table>

If ground transport time to a Resource (Level I) or Regional (Level II) TCF is less than 30 minutes,
Transport to the nearest Resource (Level I) or Regional (Level II) Trauma Care Facility.
If greater than 30 minutes ground transport time to Resource (Level I) or Regional (Level II)
Transport to the nearest appropriate Trauma Care Facility.
If time can be saved or level of care needs exist, tier with ground or air ALS service program
If step 1 does not apply, move on to step 2

**Step 2 - Assess for Anatomy of an Injury**

All Penetrating injury to head, neck, torso, and extremities proximal to elbow and knee
Partial or full thickness Burns > 10% TBSA or involving face/airway
Amputation proximal to wrist or ankle
Paralysis or Parasthesia
Suspected two or more long bone fractures
Suspected pelvic fracture
EMS provider judgment for possible abdominal or thoracic injuries.

Crushed, degloved, or mangled extremity
Flail chest
Any open long bone fracture
Open or depressed skull fracture

If ground transport time to a Resource (Level I) or Regional (Level II) TCF is less than 30 minutes,
Transport to the nearest Resource (Level I) or Regional (Level II) Trauma Care Facility.
If greater than 30 minutes ground transport time to Resource (Level I) or Regional (Level II), Transport to the nearest appropriate Trauma Care Facility.
If time can be saved or level of care needs exist, tier with ground or air ALS service program
If step 2 does not apply, move on to step 3

**Step 3 - Consider Mechanism of Injury & High Energy Transfer**

Falls – Adult: > 20 ft. (1 story = 10 ft)
Intrusion: > 12 in, occupant site; > 18 in, any site,
Death in same passenger compartment, Vehicle telemetry data consistent with high risk of injury
Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
Motorcycle crash > 20 mphRollover (unrestrained occupant) Bicyclist into handlebars
Transport to the nearest appropriate Trauma Care Facility, need not be the highest level trauma care facility.

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

**Step 4 - Consider risk factors:**

Age > 55 yrs (Risk of injury/death increases)
Time-sensitive extremity injury
EMS provider judgment

Anticoagulation and bleeding disorders
Pregnancy > 20 weeks

Transport to the nearest appropriate Trauma Care Facility, need not be the highest level trauma care facility.
If none of the criteria in the above 4 steps are met, follow local protocol for patient disposition.
When in doubt, transport to nearest trauma care facility for evaluation.

For all Transported Trauma Patients

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

Out of Hospital Trauma Triage Destination Decision Protocol

IOWA’S TRAUMA SYSTEM

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

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

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

**OR**

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

**OR**

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

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

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

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

**Step 2 - Assess for Anatomy of an Injury**

All Penetrating injury to head, neck, torso, and extremities proximal to elbow and knee
Partial or full thickness burns > 10% TBSA or involving face/airway
Amputation proximal to wrist or ankle
Crushed, degloved, or mangled extremity
Paralysis or Parasthesia
Suspected two or more long bone fractures
Suspected pelvic fracture
EMS provider judgment for possible abdominal or thoracic injuries.

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

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

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

**Step 3 - Consider Mechanism of Injury & High Energy Transfer**

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

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

Death in same passenger compartment,

Vehicle telemetry data consistent with high risk of injury

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

Motorcycle crash > 20 mph Rollover (unrestrained occupant)

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

If step 3 does not apply, move onto step 4

**Step 4 - Consider risk factors:**

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

Time-sensitive extremity injury

Contact Medical Control:

1. Give patient report to include: MOI, Injuries, Vital Signs & GCS, Treatment, Age, Gender and ETA

For all Transported Trauma Patients

1. Contact Medical Control:

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

<table>
<thead>
<tr>
<th><strong>Special Considerations</strong></th>
</tr>
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<tbody>
<tr>
<td>Patients with profound hypothermia or drug or toxin overdose may benefit from continued resuscitation.</td>
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</table>
Appendix F

Strategies for Reperfusion Therapy: Acute Coronary Syndromes

Reperfusion Therapy Screening Not Limited To Paramedic Level

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

1. If available, obtain 12-Lead EKG and transmit to receiving facility

2. EMT level – Transport patient to closest appropriate facility. Contact medical control for decision on completing thrombolytic checklist.

3. PS Level – Evaluate 12-Lead for evidence of STEMI.

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

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

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

Note: See Fibrinolytic Checklist on the following page
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.

<table>
<thead>
<tr>
<th>DATE:</th>
<th>PATIENT AGE:</th>
<th>MALE</th>
<th>FEMALE</th>
<th>INCIDENT/RECORD #:</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABSOLUTE CONTRAINDICATIONS</strong></td>
<td></td>
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<tr>
<td>Any known intracranial hemorrhage?</td>
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<tr>
<td>Known structural cerebral vascular lesion?</td>
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<td>Ischemic stroke within 3 months EXCEPT acute ischemic stroke within 3 hours?</td>
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<tr>
<td>History of chronic, severe, poorly controlled hypertension?</td>
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<td>Severe, uncontrolled hypertension on presentation (S &gt;180mmHg or D&gt;110mmHg)</td>
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<td>Current use of anticoagulants?</td>
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**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
Appendix G

Strategies for Reperfusion Therapy: Acute Stroke

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.

<table>
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<tr>
<th>DATE:</th>
<th>PATIENT AGE:</th>
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<th>FEMALE</th>
<th>INCIDENT/RECORD #:</th>
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**EMS Provider Print Name:** [Signatures]
Appendix H

Simple Triage and Rapid Treatment

START

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**

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<thead>
<tr>
<th>Color</th>
<th>Status</th>
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<tr>
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<td>Minor/Ambulatory</td>
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<tr>
<td>Yellow</td>
<td>Delayed</td>
</tr>
<tr>
<td>Red</td>
<td>Immediate</td>
</tr>
<tr>
<td>Black</td>
<td>Deceased/Expectant</td>
</tr>
</tbody>
</table>

**Respirations**

- NO respirations → DECEASED
- Respirations → IMMEDIATE

**Perfusion**

- Radial Pulse Absent OR Over 2 seconds → CAN'T Follow Simple Commands → IMMEDIATE
- Radial Pulse Present → Under 2 seconds → CAN Follow Simple Commands → DELAYED

**Mental Status**

- Position → Airway
- Under 30/min. → IMMEDIATE
- Over 30/min. → IMMEDIATE

All Walking Wounded → MINOR
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
Assessment Based Spinal Management

The following represents clinical criteria for initial assessment of spine injury for patients with an uncertain mechanism of injury. **The use of this procedure is only approved for the Paramedic Specialist and Paramedic level.**

![Flowchart Diagram]

*Assess for presence of distracting injuries

Definition of “Spinal Immobilization:” Mechanical immobilization of the entire spinal column that is inclusive of the head through the pelvis.
Appendix L

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 M
EMS APPROVED APBBREVIATIONS

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
c 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
Mgtt 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
O2 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
<table>
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<tr>
<td>PERL</td>
<td>pupils equal, reactive to light</td>
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<tr>
<td>PJC</td>
<td>premature junctional</td>
</tr>
<tr>
<td>po</td>
<td>by mouth</td>
</tr>
<tr>
<td>pr</td>
<td>per rectum</td>
</tr>
<tr>
<td>prn</td>
<td>whenever necessary, as needed</td>
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<tr>
<td>PVC</td>
<td>premature ventricular contraction</td>
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<td>SL</td>
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<tr>
<td>SOB</td>
<td>shortness of breath</td>
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<tr>
<td>SQ</td>
<td>subcutaneous</td>
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<td>sign, symptoms</td>
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<td>supraventricular tachycardia</td>
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<td>symptoms</td>
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<td>TID</td>
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<td>TKO</td>
<td>to keep open</td>
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<tr>
<td>VF</td>
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<td>w/s</td>
<td>watt second setting</td>
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APPENDIX N

EZ-IO AD & EZ-IO PD Infusion System

TRAINING:
The EZ-IO AD & EZ-IO PD infusion systems require specific training prior to use.

INDICATIONS:
EZ-IO AD (40kg and over) EZ-IO PD (3-39kg)
1) Immediate vascular access in emergencies.
2) Intravenous fluids or medications are urgently needed and peripheral IV cannot be established in 2 attempts or 90 seconds AND the patient exhibits one or more of the following:
   a. An altered mental status (GCS of 8 or less)
   b. Respiratory compromise (SaO2 90% or less after appropriate oxygen therapy, respiratory rate of <10 or >40 min.
   c. Hemodynamic instability (Systolic BP of <90)
3) EZ-IO AD & EZ-IO PD should be considered PRIOR to peripheral IV attempts in the following situations:
   a) Cardiac arrest (medical or trauma)
   b) Profound hypovolemia with alteration of mental status
   c) Patient with immediate need for delivery of medications or fluids.

CONTRAINDICATIONS
a) Fracture of the bone selected for IO infusion. (Consider alternate site)
 b) Excessive tissue at insertion site with the absence of anatomical landmarks.
 c) Previous significant orthopedic procedures. (IO within 24 hours, prosthesis)
 d) Infection at the site selected for insertion. (Consider alternate site)
CONSIDERATIONS

**Flow rate:** Due to the anatomy of the IO space, flow rates may appear to be slower than those achieved with an IV catheter.

- Ensure the administration of an appropriate rapid **Syringe Bolus (flush)** prior to infusion. **NO FLUSH= NO FLOW**
  - Rapid syringe bolus (flush) the EZ-IO AD with 10 ml of normal saline
  - Rapid syringe bolus (flush) the EZ-IO PD with 5 ml of normal saline
  - Repeat bolus flush as needed
- To improve continuous flow rates always use a syringe, pressure bag or infusion pump

**Pain:** Insertion of the EZ-IO AD & EZ-IO PD in conscious patients has been noted to cause mild to moderate discomfort (usually no more painful then a large bore IV) However, IO infusion for conscious patients has been noted to cause severe discomfort.

- Prior to IO syringe bolus (flush) or continuous infusion in alert patients, SLOWLY administer Lidocaine 2% through the EZ-IO hub. Ensure that patient has no allergies or sensitivity to Lidocaine.
  - EZ-IO AD SLOWLY administer 20-40mg Lidocaine 2%
  - EZ-IO PD SLOWLY administer 0.5mg/kg Lidocaine 2%

**PRECAUTIONS:**
The EZ-IO AD & the EZ-IO PD are not intended for prophylactic use

**EQUIPMENT:**
EZ-IO Driver
EZ-IO AD or EZ-IO PD Needle Set
Alcohol or Betadine Swab
EZ-Connect or Standard Extension Set
10ml Syringe
Normal Saline (or suitable sterile fluid)
Pressure Bag or Infusion Pump

2% Lidocaine

EZ-IO Yellow wristband

**PROCEDURE:** *If the patient is conscious advise of EMERGENT NEED for this procedure and obtain informed consent*

1. Wear appropriate BSI precautions
2. Determine EZ-IO AD or EZ-IO PD indications
3. Rule out contraindications
4. Locate appropriate insertion site (Proximal Tibia, Distal Tibia or Proximal Humerus)
5. Prepare insertion site using aseptic technique
6. Prepare the EZ-IO driver and appropriate needle set
7. Stabilize site and insert appropriate needle set
8. Remove EZ-IO driver from needle set while stabilizing catheter hub
9. Remove stylet from catheter, place stylet in shuttle or approved sharps container
10. Confirm placement
11. Connect primed EZ-Connect
12. Slowly administer appropriate dose of Lidocaine 2% IO to conscious patients
13. Syringe bolus (flush) the EZ-IO catheter with the appropriate amount of normal saline
14. Utilize pressure (syringe bolus, pressure bag or infusion pump) for continuous infusions where applicable
15. Begin infusion
16. Dress site, secure tubing and apply wristband as directed
17. Monitor EZ-IO site and patient condition
18. Remove Catheter within 24 Hours
1) **Perform scene size-up.**

Use proper body substance isolation. Gloves are needed when there is a potential of contacting blood or body fluids; gowns are needed when large splash situations are likely, e.g., childbirth or major trauma; masks and eye protection are needed in situations when there is potential for blood or body fluid spatter. Assess scene safety, trauma (MOI) or medical (NOI), and number of patients.

2) **Perform initial assessment.**

Assess the general impression of patient, chief complaint, responsiveness, airway, breathing, and circulation status. Apply high flow oxygen, begin treatment for life-threatening injury/illness, if needed, and make transport decision based upon initial assessment.

**Indications:**

The Combitube® is used for adult patients who are unconscious, apneic, and have no gag reflex.

**Contra-indications:**

Never insert the Combitube® in a patient who is conscious with a gag reflex, who is under the age of 16, less than five feet in height, who has swallowed a corrosive substance, or who has known esophageal disease.

3) **Gather and prepare necessary equipment.**

The necessary equipment for Combitube® insertion includes the Combitube®, 1000cc syringe, 20cc syringe, water-soluble lubricant, and stethoscope. Inflate and check both the distal cuff and the pharyngeal balloon for proper functioning. Lubricate the distal end of the tube with water-soluble lubricant.

4) **Position for Combitube® tube insertion.**

Position the patient's head in a neutral or slightly flexed position if no suspected spinal injury (if a spine injury is suspected, maintain a neutral, in-line head position). Position yourself at the head of the patient (your left should also be the patient's left) with the assembled Combitube® equipment.

5) **Insert the Combitube®.**

Gently grasp the patient's lower jaw with the thumb and index finger of your non-dominant hand, lifting slightly upward. Holding the Combitube® in your dominant hand blindly insert the Combitube® into the midline of the mouth and pharynx following the normal curvature. Advance tube until the black measurement rings are aligned with the patient's teeth or the alveolar ridges. Never force the device; if it does not advance, simply readjust the insertion.
6) **Inflate the pharyngeal balloon.**

Using the larger syringe, inject 100cc of air into the pharyngeal balloon or blue pilot valve or until resistance is felt. The device may move slightly as the Combitube® seats itself within the posterior pharynx.

7) **Inflate the distal cuff.**

Using the 20 cc syringe, inject 15 cc of air into the distal cuff (white pilot valve) or until resistance is felt.

8) **Ventilate the patient using the #1 external tube.**

The external tube marked #1 will be longer than tube #2. In most cases the Combitube® will be inserted into the esophagus. Always listen for breath sounds in the lung apices and bases, as well as over the epigastrium. If the tube is placed properly, there should be breath sounds in the lungs and no sound over the epigastrium.

9) **Ventilate using the #2 external tube.**

If there is an absence of breath sounds and positive sounds over the epigastrium, use the smaller #2 external tube. This will mean the tube is in the trachea. Once switched, again listen for breath sounds in the apices and bases of the lungs and over the epigastrium.

10) **Ventilate with 100% oxygen and bag-valve.**

Once tube placement is confirmed, ventilate the patient with high-flow oxygen at an appropriate rate. Always reassess and allow for exhalation between ventilations.

11) **Continually assess tube placement.**

Since there is always a possibility for the tube to slip from its position or be incorrectly placed, after every major patient movement the tube's placement should be reevaluated by reassessing lung sounds and over the epigastrium.

12) **Continue with further assessments.**

Because securing the airway is most important, further assessment may not take place until after securing the airway. It may be necessary to complete the initial, focused, detailed, and on-going assessments after orotracheal intubation.

13) **Remove tube, if indicated.**

It may be necessary to remove the tube if the patient regains consciousness and begins to breathe on his/her own. In these cases, make sure a large bore suction catheter and suction unit are available. Never remove a tube unless the patient has resumed breathing on his/her own. If no spinal injury, turn the patient onto the left side and deflate all cuffs. In a smooth motion, remove the tube from the oropharynx. Be alert for vomiting and suction the oropharynx.
APPENDIX P

KING LTS-D AIRWAY

1. Indications

A. A need to secure an airway and provide ventilation for patients who are unconscious, have no gag reflex and are over 4 feet tall (sizes 3, 4 & 5).

B. This is a secondary/bridge device for the EMT-P/PS levels to be used when attempts to manage the airway with endotracheal intubation are unsuccessful or improbable.

C. This is the primary airway device for FR-EMT-I levels. In the event the King LTS-D cannot be successfully placed, a combitube should be inserted.

D. EMT-P/PS levels: if this device has been placed upon your arrival to the scene it shall be the primary airway of choice for patients in cardiac arrest. Should the device be improperly placed or inadequate to secure the patients airway, orotracheal intubation may then be attempted or a combitube may be used. Orotracheal intubation remains the primary airway of choice for all other patients.

2. Procedure

A. Choose the correct size airway, based on patient height.

1. Size 3(yellow) 4-5 feet tall.

2. Size 4(red) 5-6 feet tall.

3. Size 5(purple) greater than 6 feet tall.

B. Test the cuff inflation system by injecting the maximum recommended volume of air into the cuffs. Remove all air from both cuffs prior to insertion.

1. Size 3- 60ml.

2. Size 4- 80ml.

3. Size 5- 90ml.

C. Apply a water-based lubricant as needed to the beveled distal tip and posterior aspect of the tube taking care to avoid introduction of lubricant in or near the ventilatory openings.

D. Have a spare King LTS-D ready and prepared for immediate use.

E. Pre-oxygenate / ventilate the patient.

F. Ensure gag reflex is not intact.

G. Position the head. The ideal position is the “sniffing position”, however in cases of trauma neutral position is acceptable.
H. Hold the airway at the connector with the dominant hand. With non-dominant hand, hold mouth open and apply tongue/jaw lift.

I. With the airway rotated 45-90 degrees laterally (outward), introduce the device in to the corner of the mouth and advance until the tip is under the base of the tongue. Rotate the airway medially back to upright position and in to the midline position in the mouth. Advance the airway, without using excessive force, until the base of the colored connector is even with the teeth/gums. It is better to insert the device too deep initially and withdraw as needed for proper ventilation.

J. Inflate the cuffs to 50-70 ml. using a standard luer-tipped syringe. Use minimum amount of pressure necessary to seal the airway at the peak ventilatory pressure employed.(See maximum amounts above.)

K. Check lung ventilation by auscultation, chest movement and verification of CO2 by capnography or CO2 detector if available. Bagging should be able to be done with relative ease.

L. If ventilation is not sufficient, gently retract the airway 1cm at a time to achieve optimal ventilation and easy bagging. Add 10-20 ml of additional cuff volume as needed to ensure proper seal. Do not exceed the maximum cuff volume indicated for each size.

M. Depth markings are provided at the proximal end of the airway which refers to the distance from the distal ventilatory opening. When properly placed, with the distal tip and cuff in the esophagus, and the ventilatory openings aligned with the opening to the larynx, the depth markings give an indication of the distance, in centimeters, from the vocal cords to the teeth.

N. Secure the airway using an appropriate tube holder such as the Thomas ET holder.

O. Monitor End Tidal CO2 if available

3. Removal

A. Removal should always be carried out with suction equipment and intubation equipment readily available for use.

B. It is important that both cuffs are completely deflated before removal.

4. Contraindications

A. Responsive patients with an intact gag reflex.

B. Patients with known esophageal disease.

C. Patients who have ingested caustic substances.

5. Considerations

A. The King LT does not protect the airway from the effects of regurgitation and aspiration.

B. Intubation of the trachea can not be ruled out as a potential complication.

C. Lubricate only the posterior surface of the airway.

D. Medications can not be given down this airway
APPENDIX Q

OROTRACHEAL INTUBATION

1. Assemble all equipment (ET tube, blades/handle, syringe, stylette, lubricant, confirmation devices, bag-valve, suction)

2. Position patient supine with head hyperextended (maintain manual in-line stabilization for suspected/know cervical spine trauma)

3. Hyperventilate the patient with 100% oxygen for at least one minute; avoid excessive tidal volumes

4. Direct an assistant to perform a Sellick maneuver

5. Insert the laryngoscope blade into right side of the mouth, sweeping the tongue to the left, and lift to visualize the vocal cords; avoid a rocking motion/contact with the upper teeth

6. Insert the endotracheal tube under direct visualization, seeing the tube pass through the vocal cords, and advancing it so the cuff lies just below the vocal cords, if difficulty in visualization exists, consider use of bougie device.

7. Inflate the cuff.

8. Confirm placement of the endotracheal tube
   
   Primary Confirmation Techniques
   
   A. Direct visualization of tube passing through the vocal cords

   B. Observation of bilateral chest rise and fall with each ventilation and exhalation and ABSENCE of breath sounds over the epigastic region

   C. Auscultation with a stethoscope to verify the presence of breath sounds with each ventilation over; Right and left sides of the anterior chest and Right and left midaxillary lines

   Secondary Confirmation Techniques

   A. Positive end-tidal or exhaled CO2 detector (evaluate for color change after 6 ventilations-may not change color in cardiac arrest)

   B. Esophageal detector device (immediate re-expansion of deflated bulb attached to ET tube; false positives may occur with the morbidly obese/late pregnancy patient, copious tracheal secretions, status asthmaticus, or gastric inflation from BVM)

   C. In the event that esophageal placement is suspected, IMMEDIATELY remove the tube and provide BVM until tracheal intubation or alternative airway placement (i.e., Combitube, KING) can be achieved

9. Prevent dislodgement by securing the endotracheal tube with a commercial tracheal tube holder; note/document placement at the front teeth (typically approx. 22 cm.) and at commercial tube holder

10. Apply cervical collar and place patient on long spineboard with head blocks to prevent dislodgement

11. A maximum of 3 intubation attempts may be made, depending upon the patient’s clinical situation. In the event that endotracheal intubation is NOT achieved and the patient has no contraindications, place a Combitube or KING airway

12. Monitor End Tidal CO2 if available
APPENDIX R

BLOOD GLUCOSE MONITORING

Services who choose to provide Glucose Monitoring shall follow the guidelines set out by the Clinical Laboratory Improvement Amendment (CLIA) and follow a protocol approved by the service program's medical director. To order a C.L.I.A. waiver form call 319-335-4500.

Indications:
1. Known diabetic with signs & symptoms of blood sugar derangements
2. Altered mental status
3. Signs/symptoms of a stroke, to rule out hypoglycemia

Precautions:
1. Use approved procedure to minimize exposure to infectious agents by the patient and the provider
2. Correlate reading with patient’s clinical condition

Procedure:
Obtain a fresh blood sample from the patient by either of the following:
1. Capillary technique
   a. Clean fingertip thoroughly with alcohol pad
      b. Puncture fingertip and allow a large drop of blood to form
      c. Wipe puncture site with clean, dry 2x2
      d. Allow large drop of blood to form again to place on reagent/test strip
2. Venous technique
   a. Using sterile procedure, draw/acquire small blood sample from the IV catheter/needle for testing

Interpretation:
1. Visual: perform visual interpretation according to manufacturer’s guidelines
2. Metered: obtain metered reading according to manufacturer’s guidelines
3. Correlate reading with the patient’s clinical condition
APPENDIX S

PULSE OXIMETRY PROCEDURE

Application of the pulse oximeter is not a priority in the initial management of the critically ill or injured patient. The pulse oximeter can be used to help monitor the patient’s oxygenation after the usual procedures to stabilize the patient are completed (ABC’s management).

Procedure/Treatment:

1. Start treatment based on initial assessment to stabilize the patient while applying pulse oximeter.

2. Position patient comfortably and support dependent extremity to be used for monitoring.

3. Remove finger nail polish. Polish can falsely alter saturation.

4. Attach sensor probe to finger or bridge of nose. May also use the earlobe or toes.

5. Oxygen should be titrated to maintain a reading of 94-99%

Potential problems:

1. Inaccuracy if O2 saturation less than 70%.

2. Possible interference with ambient light.

3. Presence of carboxyhemoglobin will produce normal reading in the presence of severe tissue hypoxemia.

Measurements can be difficult to get in the presence of vasoconstriction, hypotension and anemia.
APPENDIX T

MAINTENANCE OF NON-MEDICATED IVs

I. DISCONTINUING AN IV:

A. Procedure

1. Advise or receive orders from medical direction to discontinue IV.
2. Take appropriate BSI precautions.
3. Explain procedure to the patient and/or family members.
4. Turn off IV fluid by closing pressure wheel on administrative tubing.
5. Remove tape and other securing material from IV tubing and catheter.
6. Remove IV catheter and administration tubing still connected.
7. Cover the puncture site with an alcohol wipe, 2x2, or 4x4 and hold pressure until bleeding stops.
8. Cover wound with appropriate dressing (Band-Aid).
9. Discard IV administration set, fluid, and catheter in an approved fashion.
10. Document discontinuance of IV.

II. CHANGING IV FLUIDS:

A. Rationale

1. During long distance transfers.
2. Change of fluids by medical direction.

B. Procedure

1. Check orders/authorization for change of IV fluids from medical direction.
2. Check for correct IV fluid.
3. Take appropriate BSI precautions.
4. Prepare new IV solution, remove covers.
5. Turn off IV flow rate by closing pressure wheel on administration tubing.
6. Invert IV container, remove the IV container to be changed from the administration set, maintaining a sterile environment.
7. Invert the new solution container; puncture the replacement solution container with spike of administration set.

8. Turn IV container over (upright).

9. Fill drip chamber of administration set to marked line if needed.

10. Adjust IV flow rate to desired amount.

11. Reassess IV site and flow.

12. Discard used IV container in an appropriate manner.


**III. Precautions**

1. Do not allow an IV to "run dry".

2. If the drip chamber is empty, will need to "bleed" air from the tubing before adjusting the IV flow rate.
APPENDIX U

12-LEAD ELECTROCARDIOGRAM ACQUISITION

Purpose:
1. To obtain a diagnostic quality 12 Lead ECG for the patient with a suspected acute cardiac event.

Indications:
1. Chest pain or pressure in any patient over age 25
2. Syncopal episode in any patient over age 25
3. Unexplained respiratory distress
4. Atypical cardiac pain (i.e., shoulder, arm, or jaw pain in absence of chest pain, especially in patients with past cardiac history or irregular pulse. Check for history of illicit drugs such as cocaine and methamphetamine use
5. Suspected Stroke

Precautions:
1. Care must be taken to avoid an unnecessary extension of scene time
2. Obvious ECG changes may or may not be present in the patient experiencing an acute myocardial infarction. Patients on whom a 12 Lead ECG is performed should be strongly encouraged to accept transport by ambulance to a hospital.

Contraindications:
1. On scene 12 Lead ECG acquisition of the unstable patient
2. On scene 12 Lead ECG acquisition of the trauma patient

Procedure:
1. Turn monitor “ON”
2. Assure limb and precordial leads are appropriately connected to monitor
3. Prepare patient’s skin for electrode application by:
   a. Shaving excessive hair at the electrode site
   b. Cleaning oily or dirty skin with an alcohol pad, then drying briskly
4. Avoid locating electrodes over tendons and major muscle masses
5. Identify electrode sites and apply electrodes as follows:
   a. RUE or RA-right arm
b. LUE or LA-left arm

c. RLE or RL-right leg

d. LLE or LL-left leg

**Precordial Lead Placement**

1. V1-Fourth intercostal space to the right of the sternum
2. V2-Fourth intercostal space to the left of the sternum
3. V3-Directly between leads V2 and V4
4. V4-Left fifth intercostal space, midclavicular line
5. V5-Level with V4, left anterior axillary line
6. V6-Level with V5, left midaxillary line

**Acquisition**

1. Encourage the patient to relax all muscles and remain as still as possible; prevent any tension on ECG cable
2. Be sure patients correct age and sex are entered in the monitor, push acquire; acquisition takes approximately 10 seconds
   a. 12 Lead ECG will automatically print
   b. Avoid acquiring ECG in a moving vehicle unless pt is unstable
3. Activate a “Cardiac Alert” in patients with 12 Lead ECG ST elevation of > 1mm in 2 or more contiguous leads and transport the patient lights and sirens to a receiving facility with interventional cath lab capabilities.
4. If capability exists, transmit the 12 Lead ECG to the receiving hospital
APPENDIX V

ELECTRICAL CARDIOVERSION

Purpose:
To restore an effective heart rhythm in the hemodynamically unstable patient with tachycardia. The unstable condition MUST be related to the tachycardia.

Signs and symptoms of instability may include:

1. Chest pain
2. Shortness of breath
3. Decreased level of consciousness
4. Hypotension
5. Shock
6. Pulmonary congestion; CHF
7. Acute MI

Indications:

1. Ventricular Tachycardia with a pulse
2. Supraventricular tachycardia
3. Atrial Fibrillation/Atrial Flutter

Precautions:

1. Delay of cardioversion because of problems with synchronization resulting in worsening patient condition
2. Risk of thromboembolic complications (i.e., stroke) in patients with history of atrial fibrillation duration > 48 hours

Procedure:

1. Consider sedation for the alert patient such as Morphine 2-5mg slow IVP, Valium 5-10mg slow IVP
2. Turn on defibrillator
3. Attach monitor leads to the patient
4. Place defibrillation pads on the patient as directed by the manufacturer

5. Engage the synchronization mode by pressing the “sync” control button

6. Look for markers on the “R” waves indicating sync mode

7. If necessary, adjust monitor gain/EKG size until sync markers occur with each R wave

8. Set initial joules to:
   - 50-100J for SVT or A-Flutter
   - 100J for Ventricular Tachycardia
   - 120J for Uncontrolled A-fib

Announce to team members: “Charging defibrillator…stand clear”

9. Press “Charge” button

10. When the defibrillator is charged, announce the shock

11. Press and hold the “shock” button

12. Check the monitor. If tachycardia persists, increase the joules in a stepwise fashion, 100J, 120J, 150J, 200J and consult medical direction.

13. Remember to reset the sync mode after EACH synchronized cardioversion; most defibrillators default back to the unsynchronized mode. This default allows an immediate shock if the cardioversion produces VF. If sync is retained remember to shut it off if VF presents.
APPENDIX W

PACING, EXTERNAL DEMAND CARDIAC

INDICATIONS: A qualified EMS provider* may use this skill for the following:

a. Profound bradycardia with hemodynamic compromise.

PRECAUTIONS:

a. Not to be used on children under 12 unless Medical Control ordered.

b. The patient must be monitored with both the defibrillation/pacing pads and the patient electrode cable.

CONTRAINDICATIONS: Noninvasive pacing is contraindicated for the treatment of ventricular fibrillation. Severe hypothermia is a relative contraindication to pacing a patient with bradycardia.

SPECIAL CONSIDERATION: Patients with implantable pacemakers may require higher energy and rate.

PROCEDURE:

BRADYCARDIC PATIENTS

1. Turn on pacemaker

2. Set the rate @ 60-80 BPM start the amperage @ 0mA

3. Assess the patient for both mechanical and electrical capture.

4. Increase the output in 10 mA increments until mechanical capture occurs; this will be dependent upon the electrical resistance of the patient. Following capture, back amperage down in increments of 2-5 mA to ensure lowest possible setting.

5. The patient will experience pain or discomfort with this and treat as appropriate with

   - Morphine 2-5 mg IV slow over 2-3 minutes maybe repeated in 5-10 min increments to a total of 10mg
   - Diazepam (Valium) 5-10mg IV slow

6. The adjustment of the amperage to maintain capture maybe necessary with prolonged use or with increased discomfort of the patient.

If at any point the BRADYCARDIA paced patient goes into either V-fib or V-tach, immediately shut pacer off and proceed to deliver defibrillation as normal with the defibrillator portion of the unit.
APPENDIX X

NEEDLE CRICO THYROTOMY

**Indications:** A trained Paramedic may use this skill when unable to gain airway access by other means, or there is an upper airway obstruction.

**Contraindications:**

1. Pre-existing laryngeal pathology.
2. Anatomical barriers
3. Anticoagulation therapy.

**Complications:**

1. Injury to surrounding tissue.
2. Hemorrhage.
3. Infection.
4. Edema.
5. Aspiration of blood.

**Procedure/Treatment:**

1. Stabilize the patient’s head in the neutral position.
2. Identify the cricothyroid membrane and prepare the skin.
3. Stabilize the cricoid and thyroid cartilages with the nondominant hand.
4. Once the cricothyroid membrane has been identified, insert the 14 or smaller gauge (larger diameter) gauge over the needle catheter device just below the midpoint of the cricothyroid membrane with the needle angled at 45 degrees caudally.
5. Withdraw the needle carefully while advancing the plastic catheter caudally into the trachea.
6. Aspirate with the attached 10 cc syringe.
7. Attach the hub of the catheter to a prepared ventilation device.

**Prepared Ventilation Device**

A. While the end of a #3 ETT tube is the preferred device, one prong of a nasal cannula may be attached as a last resort or if a #3 ETT end is not readily available, occlude the other prong of the nasal cannula during ventilation.

B. Turn oxygen to 15 liters per min

C. Ventilate with a #3 ETT connected and ventilation rate of 12/min. at a 1:4 ratio to allow for exhalation.
APPENDIX Y

NEEDLE THORACOSTOMY

**Indications:** A trained Paramedic may use this skill for respiratory compromise associated with one or more of the following:

1. Tension Pneumothorax.
2. Absent or greatly decreased breath sounds over the hemothorax area.
3. Trachea shifted to unaffected side and/or JVD.
4. Subcutaneous emphysema.
5. Multiple rib fractures.

**Procedure/Treatment:**

1. If at all possible, perform this procedure when en route to the receiving facility, lights and sirens
2. Expose and cleanse anterior chest at level of the 2nd intercostal space on the affected side.
3. Find 2nd intercostal space midclavicular line with gloved finger.
4. Using 14 gauge over-the-needle catheter and syringe attached direct needle **over** the third rib into the 2nd intercostal space.
5. Apply enough pressure to push the needle through the intercostal muscle and into the pleural cavity.
6. You should pull back air in the syringe or if no syringe on the needle you should hear a rush of air, either of these should be considered a positive placement.
7. Remove the needle leaving catheter in place and securing with tape.
8. Connect to one-way valve.
9. Assess patient for improvement in status.
APPENDIX Z

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

Purpose:
Continuous Positive Airway Pressure has been shown to rapidly improve vital signs, gas exchange, the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in the patients who suffer from shortness of breath from congestive heart failure and acute carcinogenic pulmonary edema. CPAP is also shown to improve dyspnea associated with pneumonia, (COPD) chronic obstructive pulmonary disease (asthma, bronchitis, & emphysema). In patients with CHF, CPAP improves hemodynamics by reducing preload and afterload.

Indications:
Dyspnea / Hypoxemia secondary to congestive heart failure (CHF), acute carcinogenic pulmonary edema pneumonia, (COPD) - chronic obstructive pulmonary disease (asthma, bronchitis, emphysema) and:

A. Any patient who is complaining of shortness of breath for reasons other than pneumothorax
B. Is awake and oriented
C. Has the ability to maintain an open airway (GCS>10)
D. Has a systolic blood pressure above 90 mmHg
E. Uses accessory muscles during respirations
F. Sign and Symptoms consistent with asthma, COPD, pulmonary edema, CHF, or pneumonia

Contraindications
Do NOT use if patient has:

1. Pneumothorax
2. Tracheostomy
3. Respiratory arrest
4. Agonal respirations
5. Unconscious
6. Shock associated with cardiac insufficiency
7. Penetrating chest trauma
8. Persistent nausea/vomiting
9. Facial anomalies / stroke obtundation / facial trauma
10. Pediatrics – Do not use for children under 12 years of age

Precautions:

Use care if patient:

A. Has impaired mental status and is not able to cooperate with the procedure
B. Had failed at past attempts at non-invasive ventilation
C. Has active upper GI bleeding or history of recent gastric surgery
D. Complains of nausea or vomiting
E. Has inadequate respiratory effort
F. Has excessive secretions
G. Has facial deformity that prevents the use of CPAP mask
H. CPAP should not be used with portable 02 because of the large amount of oxygen it takes to operate the device
I. Use Intubation if:
   a. Respiratory or cardiac arrest
   b. Unresponsive to verbal stimuli (GCS is <9)

Procedure:

1. Make sure the patient does not have a pneumothorax!
2. Place patient in a sitting position
3. Assess vital signs and SpO2 q5 min
4. Attach heart monitor and pulse oximeter (SA02)
5. If BP <90 systolic contact Medical Control prior to beginning CPAP
6. Use 1-10cmH20

7. Explain the procedure to the patient:
i. Patient requires “verbal sedation” to be used effectively.
   a. Example: “You are going to feel some pressure from the mask but this will help you breathe easier.”

ii. Place delivery device over mouth and nose.

iii. Instruct patient to breath in through their nose slowly and exhale through their mouth as long as possible (count slowly and aloud to four, then instruct to inhale slowly).

8. Check for air leaks

9. Treatment should be given continuously throughout transport to ED.

10. Continue to coach patient to keep mask in place and readjust as needed

11. If respiratory status / level of consciousness deteriorate, remove device and consider bag valve mask ventilation and/or endotracheal intubation (see intubation protocol)

12. Documentation on the patient care record should include:
   a. CPAP level \(\rightarrow (10\text{cmH}_2\text{O})\) or “PEEP"
   b. \(\text{F}_\text{O}_2 \rightarrow (100\%)\)
   c. \(\text{SpO}_2\) q5 minutes
   d. Vital Sign q5 minutes
   e. Response to treatment
   f. Any adverse reactions

Special Notes:

1. Advise receiving hospital as soon as possible so they can prepare for the patient’s arrival

2. Do not remove CPAP until hospital therapy is ready to be placed on the patient

3. Most patients will improve in 5-10 minutes. If no improvement, consider positive pressure ventilation

4. Monitor patient for gastric distension which may lead to vomiting

5. Use nitroglycerine tablets if needed – this avoids nitroglycerine spray from being dispersed on patient/EMS crew

6. May be the treatment of choice for a patient with a DNR order
APPENDIX AA

Mucosal Atomization Device

Procedure

- Step 1: Assess the patient to ensure the nasal cavity is free of blood or mucous. If these are present you can:
  - Choose a different method to deliver the drug
  - Suction the nose prior to drug delivery

- Step 2:
  Draw up a weight based dose of medication using the most concentrated form of the drug available. Include MAD nasal dead space of (0.01ml) in your volume.

- Step 3:
  Insert MAD nasal into nostril apply half the drug to one nostril, repeat in other nostril with remainder of the drug. Be sure to briskly compress the syringe. Failure to briskly compress will fail to automize the medication resulting in a steady flow of liquid which will run into the throat. Gently place your hand on the patients head to help control any movement.

- Step 4:
  Assess patients’ response to the medication and repeat therapy or choose an alternate treatment if needed. Onset is usually within 3-5 minutes with a peak in 10-20 minutes.

- Step 5:
  Consider the need for IV/IO access if vital signs become unstable or pt has an immediate need for other medications or fluids.

Indications for Use

Drugs delivered with this method are absorbed via the nasal mucosa. Use of a MAD is a safe alternative for delivery of certain medications when IV/IO access is not available, not practical or not needed for long term pt care. Medications which may be administered via this method are Ativan, Fentanyl, Morphine, Narcan, Valium and Versed.

Typical applications might include:
- Overdose with no IV access
- Pain control with no IV access
- Seizures
- Sedation for medical procedures or Behavioral Problems
**Contraindications**

- Excessive blood in or bleeding from the nose
- Each administration may not exceed 1 ml per nare with a preference of only 0.5 ml per nare.
- Diluted medications

**Side Effects**

Normal side effects of each drug remain a possibility. Some drugs especially Versed may cause an uncomfortable burning sensation in the nares which generally resolve in 30-45 seconds and should be explained to the patient.

**Materials Needed for Procedure**

- MAD Nasal Device
- Syringe
- Needle or method of drawing up the medication
- Full Concentration Medication
APPENDIX BB

MEDICATION ASSISTED INTUBATION

INDICATIONS

- Uncontrolled, obstructed or inadequate airway secondary to trauma or overdose when further sedation is needed.
- Decreased level of consciousness, combativeness or severe agitation secondary to trauma or suspected CVA.
- Combative or uncontrollable head trauma patient that presents potential for injury to self or others.
- CHF, COPD, or asthma patient with hypoxia and or respiratory exhaustion who cannot be easily orally intubated.
- Burn patient with potential or existing respiratory compromise

CONTRAINDICATIONS:

- Hypersensitivity to medications that would be used, (i.e., VERSED, ETOMIDATE, BENZOCAINE, FENTANYL).
- Patients with tissue destructive conditions: crushing injuries>72 hrs old, sepsis
- Patients with muscle wasting conditions: e.g. Parkinson’s, Muscular Dystrophy, pre-existing spinal cord injuries resulting in paralysis.

PROCEDURE

Ensure all equipment is set up for intubation. Ensure adequate spinal precautions are taken. Pre-oxygenate with high flow oxygen by mask. Excessive manual ventilation may result in gastric distention with vomiting and aspiration. Be prepared to suction as needed.

If needed, sedate the patient with Fentanyl 2.0 mcg/kg IV, max dose of 250 mcg. Consider need for Hurricane Spray (i.e, Benzocaine). Etomidate 0.3 mg/kg IV slowly over 1-3 min. In a typical pt, a dose of 20-40 mg of Etomidate is usually effective.
Apply cricoid pressure (Sellick maneuver) to occlude the esophagus until intubation is successfully completed and
the ETT cuff is inflated. If the patient actively vomits, cricoid pressure must be released. Once intubation is
completed, confirm the tube placement and secure the tube.

If bradycardia occurs associated with intubation, temporarily halt attempt and hyperventilate the patient with BVM
and 100% oxygen. If the patient remains bradycardic, consider ATROPINE 0.5 mg IV.

Continuation of sedation Versed 2-5 mg slowly over 1-2 min to desired effect, max of 10 mg. No more than 10 mg
used in 30 min period from initial dose.

CONSIDER USE OF ROMAZICON
Administer 0.2mg (2ml) IV over 15 seconds. If the desired level of consciousness is not obtained after waiting an
additional 45 seconds, a further dose of 0.2 mg (2ml) can be injected and repeated at 60-second intervals where
necessary up to a dose of 1 mg (10ml). Most patients will respond to doses of 0.6mg to 1 mg.

The above may be repeated in the event of resedation if there will be significant delay of arrival at the hospital, up
to a TOTAL dose of 2mg (20ml).

ATTEMPT TO CONTACT MEDICAL CONTROL PRIOR TO PREFORMING PROCEDURE
APPENDIX CC

Emergency Incident Rehabilitation AKA Firefighter Rehab

Fire departments wishing to participate in the firefighter rehab program must submit this request in writing and have an agreement for such service on file with the providing agency and the Iowa County Ambulance Service. Fire departments shall utilize their local QRS groups for this service. If no QRS group is available the Iowa County Ambulance Service may provide this service if they are available, i.e. not out on calls. The following general Policy shall be used and may be edited upon medical director approval:

Emergency Incident Rehabilitation

1. PURPOSE

To ensure that the physical and mental condition of members operating at the scene of an emergency or a training exercise does not deteriorate to a point that affects the safety of each member or that jeopardizes the safety and integrity of the operation.

2. SCOPE.

This procedure shall apply to all emergency operations and training exercises where strenuous physical activity or exposure to heat or cold exists.

3. RESPONSIBILITIES.

Incident Commander. The Incident Commander shall consider the circumstances of each incident and make adequate provisions early in the incident for the rest and rehabilitation for all members operating at the scene. These provisions shall include: medical evaluation, treatment and monitoring; food and fluid replenishment; mental rest; and relief from extreme climatic conditions and the other environmental parameters of the incident. The rehabilitation shall include the provision of Emergency Medical Services (EMS) at the Basic Life Support (BLS) level or higher.

Personnel. During periods of hot weather, members shall be encouraged to drink water and activity beverages throughout the workday. During any emergency incident or training evolution, all members shall advise their supervisor when they believe that their level of fatigue or exposure to heat or cold is approaching a level that could affect themselves, their crew, or the operation in which they are involved. Members shall also remain aware of the health and safety of other members of their crew.

4. ESTABLISHMENT OF REHABILITATION AREA.

Responsibility. The Incident Commander will establish a Rehabilitation Area when conditions indicate that rest and rehabilitation is needed for personnel operating at an incident scene or training evolution. An Iowa County EMS Staff member will be placed in charge of the sector and shall be known as the Rehab Officer. The Rehab Officer will typically report to the Logistics Officer in the framework of the incident management system, If no Logistics Officer then report to Incident Commander.

Location. The Incident Commander will normally designate the location for the Rehabilitation Area. If a specific location has not been designated, the Rehab Officer shall select an appropriate location based on the site characteristics and designations below.
**Site Characteristics.**

(1) It should be in a location that will provide physical rest by allowing the body to recuperate from the demands and hazards of the emergency operation or training evolution.

(2) It should be far enough away from the scene that members may safely remove their turnout gear and SCBA and be afforded mental rest from the stress and pressure of the emergency operation or training evolution.

(3) It should provide suitable protection from the prevailing environmental conditions. During hot weather, it should be in a cool, shaded area. During cold weather, it should be in a warm, dry area.

(4) It should enable members to be free of exhaust fumes from apparatus, vehicles, or equipment (including those involved in the Rehabilitation Operations).

(5) It should be large enough to accommodate multiple crews, based on the size of the incident.

(6) It should be easily accessible by EMS units.

(7) It should allow prompt reentry back into the emergency operation upon complete recuperation.

**Site Designation.**

(1) A nearby garage, building lobby, or other structure.

(2) Several floors below a fire in a high rise building.

(3) A school bus, municipal bus, or bookmobile.

(4) Fire apparatus, ambulance, or other emergency vehicles at the scene or called to the scene.

(5) Retired fire apparatus or surplus government vehicle that has been renovated as a Rehabilitation Unit. (This unit could respond by request or be dispatched during certain weather conditions.)

(6) An open area in which a rehab Area can be created using tarps, fans, etc.

**Resources.**

The Rehab Officer shall secure all necessary resources required to adequately staff and supply the Rehabilitation Area. The supplies should include the items listed below:

(1) Fluids - water, activity beverage, oral electrolyte solutions and ice.

(2) Food - soup, broth, or stew in hot/cold cups.

(3) Medical - blood pressure cuffs, stethoscopes, oxygen administration devices, cardiac monitors, intravenous solutions and thermometers.”

(4) Other - awnings, fans, tarps, smoke ejectors, heaters, dry clothing, extra equipment, floodlights, blankets and towels, traffic cones and fire line tape (to identify the entrance and exit of the Rehabilitation Area).
5. GUIDELINES.

a. **Rehabilitation Area Establishment.**

Rehabilitation should be considered by staff officers during the initial planning stages of an emergency response. However, the climatic or environmental conditions of the emergency scene should not be the sole justification for establishing a Rehabilitation Area. Any activity/incident that is large in size, long in duration, and/or labor intensive will rapidly deplete the energy and strength of personnel and therefore merits consideration for rehabilitation. Climatic or environmental conditions that indicate the need to establish a Rehabilitation Area are a heat stress index above 90°F (see table 1-1) or wind chill index below 10°F (see table 1-2).

b. **Hydration.**

A critical factor in the prevention of heat injury is the maintenance of water and electrolytes. Water must be replaced during exercise periods and at emergency incidents. During heat stress, the member should consume at least one quart of water per hour. The re-hydration solution should be a 50/50 mixture of water and a commercially prepared activity beverage and administered at about 40°F. Re-hydration is important even during cold weather operations where, despite the outside temperature, heat stress may occur during firefighting or other strenuous activity when protective equipment is worn. Alcohol and caffeine beverages should be avoided before and during heat stress because both interfere with the body’s water conservation mechanisms. Carbonated beverages should also be avoided.

c. **Nourishment.**

The department shall provide food at the scene of an extended incident when units are engaged for three or more hours. A cup of soup, broth, or stew is highly recommended because it is digested much faster than sandwiches and fastfood products. In addition, foods such as apples, oranges, and bananas provide supplemental forms of energy replacement. Fatty and/or salty foods should be avoided.

d. **Rest.**

The “two air bottle rule,” or 45 minutes of work-time, is recommended as an acceptable level prior to mandatory rehabilitation. Members shall re-hydrate (at least eight ounces) while SCBA cylinders are being changed. Firefighters having worked for two full 30-minute rated bottles, or 45 minutes, shall be immediately placed in the Rehabilitation Area for rest and evaluation. In all cases, the objective evaluation of a member’s fatigue level shall be the criteria for rehab time. Rest shall not be less than ten minutes and may exceed an hour as determined by the Rehab Officer. Fresh crews, or crews released from the Rehabilitation Area, shall be available in the Staging Area to ensure that fatigued members are not required to return to duty before they are rested, evaluated, and released by the Rehab Officer.

e. **Recovery.**

Members in the Rehabilitation Area should maintain a high level of hydration. Members should not be moved from a hot environment directly into an air conditioned area because the body’s cooling system can shut down in response to the external cooling. An air conditioned environment is acceptable after a cool-down period at ambient temperature with sufficient air movement. Certain drugs impair the body’s ability to sweat
and extreme caution must be exercised if the member has taken antihistamines, such as Actifed or Benadryl, or has taken diuretics or stimulants.

\[ \text{Medical Evaluation} \]

(1) Emergency Medical Services (EMS) - shall evaluate vital signs, examine members, and make proper disposition (return to duty, continued rehabilitation, or medical treatment and transport to medical facility). Continued rehabilitation should consist of additional monitoring of vital signs, providing rest, and providing fluids for rehydration. Medical treatment for members whose signs and/or symptoms indicate potential problems, should be provided in accordance with medical control procedures. EMS personnel shall be assertive in an effort to find potential medical problems early.

(2) Heart Rate and Temperature-The heart rate should be measured for 30 seconds as early as possible in the rest period. If a member’s heart rate exceeds 110 beats per minute, an oral temperature should be taken. If the member’s temperature exceeds 100.6°F, he/she should not be permitted to wear protective equipment. If it is below 100.6°F and the heart rate remains above 110 beats per minute, rehabilitation time should be increased. If the heart rate is less than 110 beats per minute, the chance of heat stress is negligible.

(3) Documentation-All medical evaluations shall be recorded on standard forms along with the member’s name and complaints. The EMS Rehab Log will be submitted to the Fire Chief/Incident Commander.