These Standing Medical Orders (SMOs) have been developed and approved through a collaborative process involving the four EMS Systems of EMS/Trauma Region 11.

The following SMOs are to be utilized as the pre-hospital medical treatment guidelines by the system’s EMT-P. It is understood that deviations from the SMOs may be necessary in the interest of assuring that a patient is transported to an appropriate medical facility rather than receive no care at all.

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# REGION 11 - CHICAGO EMS SYSTEM
## PARAMEDIC STANDING MEDICAL ORDERS
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GENERAL
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Routine Medical Care (RMC)  A-2
ADULT INITIAL ASSESSMENT – ALS

I. SCENE SIZE-UP

A. Wear appropriate personal protective equipment (PPE)

B. Assess the scene safety
   1. Evaluate hazards to EMS personnel, patients and bystanders
   2. Determine number of patients
   3. Determine the mechanism of injury/nature of illness
   4. Request additional resources as needed, and weigh the benefits of waiting for additional resources against rapid transport to definitive care
   5. Consider declaration of mass casualty incident if needed

II. INITIAL ASSESSMENT OF ADULT PATIENT

A. Assess General Impression of the patient
   1. Evaluate patient responsiveness using the AVPU scale

B. Primary Survey - Should be Airway-Breathing-Circulation (A-B-C), unless specific circumstances such as cardiac arrest or major hemorrhage where Circulation-Airway-Breathing (C-A-B) is indicated
   1. Airway - Assess for patency
      a. Open the airway as needed using either head-tilt, chin-lift or jaw thrust while maintaining c-spine stabilization as appropriate
      b. Suction airway as needed
      c. Consider use of appropriate airway adjuncts including: oral airway (OPA), nasal airway (NPA), supraglottic airway device (SGA), or endotracheal tube (ETT) as per Advanced Airway Management I-4
      d. For Respiratory Obstruction, see Respiratory Obstruction C-2
      e. For difficult airway situations in which the patient cannot be adequately oxygenated or ventilated, the patient may require diversion per the Critical Airway Policy C.26 or placement of a Needle Cricothyrotomy I-7

ALS A-1.1
2. **Breathing**
   
a. Evaluate for rate, breath sounds, accessory muscle use, retraction, and patient positioning

b. Administer oxygen as needed to maintain an oxygen saturation of >94% or at 15L by the most appropriate method for any critically ill patient (respiratory distress, shock, smoke inhalation, carbon monoxide poisoning, or cardiac arrest)

c. If apneic, see *Advanced Airway Management* I-4

3. **Circulation**
   
a. Control any major external hemorrhage
   
   i. Apply direct pressure to wound
   
   ii. For life-threatening bleeding that cannot be controlled by other means, proceed to *Tourniquet Application* I-20 and/or apply hemostatic agent

b. Assess pulse
   
   i. Assess rate and quality of carotid and radial pulses
   
   ii. If none, see *Cardiac Arrest Management: Incident Command for Cardiac Arrest (ICCA)* I-5

c. Assess perfusion status via skin color, temperature, and capillary refill

4. **Disability**
   
a. Calculate GCS as indicated

b. Evaluate gross motor and sensory exam in all extremities

c. Check blood glucose in any patient with altered mental status

d. If acute stroke suspected, perform *Cincinnati Stroke Scale* I-3 and see *Suspected Acute Stroke* D-3

5. **Expose** patient as appropriate to complaint or mechanism
   
a. Be considerate of patient modesty and environmental conditions

b. Apply appropriate intervention to maintain normal body temperature

C. **Secondary Survey** - A full secondary assessment should be completed and documented on every patient unless a critical airway, breathing, or circulation problem requires stabilization. It should not delay transport in critical patients. A secondary survey should include the following components:

ALS A-1.2
1. Head
   a. Pupils
   b. Naso-oropharynx
   c. Skull and scalp

2. Neck
   a. Jugular venous distention
   b. Tracheal position
   c. Spinal tenderness

3. Chest
   a. Chest wall bruising or deformities
   b. Retractions
   c. Breath Sounds

4. Abdomen/Flank/Back/Pelvis
   a. Bruising
   b. Distention
   c. Tenderness

5. Extremities
   a. Bruising or deformities
   b. Pulse
   c. Edema

6. Neurologic
   a. Mental Status/Orientation
   b. Motor and sensory exam

D. Obtain Baseline Vital Signs

1. An initial full set of vital signs is required on every patient including: pulse, blood pressure, respiratory rate, pulse oximetry and neurologic status assessment

2. A repeat set of vital signs is required at least every 15 minutes on stable patients and at least every 5 minutes on unstable patients

3. For patients with a cardiac or respiratory complaint or in those where acute coronary syndrome is suspected, a 12-lead EKG should be obtained as early as possible and these patients should receive continuous cardiac and pulse oximetry monitoring

ALS A-1.3
4. Initiate IV/IO access as indicated for medication or fluid administration

5. Blood sugar should be checked on any patients with altered mental status or with known or suspected diabetes

6. Continuous waveform capnography must be monitored on any patient with advanced airway management

7. Pain scale should be documented on any patient with a pain complaint

E. Obtain OPQRST History:
   1. **Onset** of Symptoms
   2. **Provocation**—location, any factors that worsen or relieve symptoms
   3. **Quality** of symptoms or pain
   4. **Radiation** of pain
   5. **Severity** of symptoms—pain scale
   6. **Time** of onset and circumstances surrounding onset

F. Obtain SAMPLE History:
   1. **Symptoms**
   2. **Allergies**
   3. **Medications**
   4. **Past** Medical/Surgical History
   5. **Last** oral intake
   6. **Events** leading up to emergency call

G. Reassessment
   1. At least every 15 minutes in a stable patient
   2. At least every 5 minutes in an unstable patient or more often if clinically appropriate

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ALS A-1.4
Scene Size-Up

Initial assessment of adult patient as per protocol A-1

Patient care per appropriate protocol and policy

Determination of BLS vs ALS care per Policy B.3

Contact Online Medical Control per Policy A.1

Transport patient (or appropriate disposition) as per Policy B.1
CARDIAC

Suspected Acute Coronary Syndrome/Cardiac Chest Pain  B-1
Pulmonary Edema  B-2
Ventricular Fibrillation & Pulseless Ventricular Tachycardia  B-3
Pulseless Electrical Activity/Asystole  B-4
Wide Complex Tachycardia with Pulse  B-5
Narrow Complex Tachycardia  B-6
Bradycardia with Pulse  B-7
Ventricular Assist Device (VAD)  B-8
Syncope or Presyncope  B-9
**ST-ELEVATION MYOCARDIAL INFARCTION (STEMI) CRITERIA**

A 12-lead ECG meets STEMI criteria if ANY of the below conditions are fulfilled:

1. Computer interpretation of the 12-lead ECG as a STEMI. This includes, but is not limited to, the following computer outputs:
   a. "either acute MI"
   b. "either acute MI suspected"
   c. "meets ST elevation MI criteria"

2. Paramedic interpretation of 12-lead ECG as STEMI (ST elevation of 1 mm in at least two contiguous leads).

3. Base station ECP interpretation of the transmitted 12-lead ECG as STEMI.

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**SUSPECTED ACUTE CORONARY SYNDROME / CARDIAC CHEST PAIN - ALS**

RMC

Cardiac monitor
Perform 12 lead ECG
Establish vascular access

4 chewable (81 mg non-enteric coated) aspirin po

SBP ≥ 100?

YES, ≥ 100

NO, < 100

NTG 0.4 mg SL

Clear lungs?

NO

See Pulmonary Edema SMO

YES

NS 300 ml IV bolus

Repeat VS if SBP remains < 100

See Non-Traumatic Shock SMO

Repeat NTG 0.4 mg SL

q 5 min for continued CP if SBP remains ≥ 100

Total 3 doses

For STEMI patients with continued CP consider:

- Morphine Sulfate 0.1 mg/kg IV
  ≤ 65 years of age – max dose 10 mg
  > 65 years of age – max dose 5 mg
- Fentanyl 1 mcg/kg IV
  ≤ 65 years of age – max dose 100 mcg
  > 65 years of age – max dose 50 mcg

Contact Medical Control for repeat dosing

Transmit ECG to receiving facility

Contact Medical Control as appropriate and prepare for transport

1 – If ECG shows STEMI, place defibrillation pads on patient.

2 – See ECG procedure (ALS Appendix I-15)

3 - Contact Medical Control before administration of nitroglycerin in patients with concern for inferior wall myocardial infarctions or recent use of erectile dysfunction medications such as sildenafil (Viagra), tadalafil (Cialis), or vardenafil (Levitra)
PULMONARY EDEMA - ALS

1 – See ECG procedure (ALS Appendix I-15)
2 – Contact Medical Control before administration of nitroglycerin in patients with concern for inferior wall myocardial infarctions or recent use of erectile dysfunction medications such as sildenafil (Viagra), tadalafil (Cialis), or vardenafil (Levitra)
VENTRICULAR FIBRILLATION & PULSELESS VENTRICULAR TACHYCARDIA – ALS

If ETCO₂ < 10 mmHg, attempt to improve CPR quality

1 – Repeat Amiodarone dose 150 mg IVP after 5th defibrillation ONLY IF patient remains pulseless and in shockable rhythm
For patients with ROSC, see Adult Post-Cardiac Arrest Care & Therapeutic Hypothermia (ALS Appendix I-6.1 – I-6.2)

### CAUSES

- **Hypoxia**: Check placement of advanced airway
- **Tension pneumothorax**: Needle decompression
- **Suspected opioid overdose**: Consider Naloxone 2 mg IV/IO
- **Suspected tricyclic antidepressant overdose**: Consider Sodium Bicarb 1 AMP IV/IO (50 ml [50 mEq] of 8.4% solution)
- **Dialysis patient/Renal failure** / Hyperkalemia: Sodium Bicarb 1 AMP IV/IO (50 ml [50 mEq] of 8.4% solution)
- **Hypovolemia**: Normal Saline bolus

* If ETCO₂ < 10 mmHg, attempt to improve CPR quality

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**SPECIFIC TREATMENT**

- **Hypoxia**: Check placement of advanced airway
- **Tension pneumothorax**: Needle decompression
- **Suspected opioid overdose**: Consider Naloxone 2 mg IV/IO
- **Suspected tricyclic antidepressant overdose**: Consider Sodium Bicarb 1 AMP IV/IO (50 ml [50 mEq] of 8.4% solution)
- **Dialysis patient/Renal failure** / Hyperkalemia: Sodium Bicarb 1 AMP IV/IO (50 ml [50 mEq] of 8.4% solution)
- **Hypovolemia**: Normal Saline bolus

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ALS B-4
1 - See ECG procedure (ALS Appendix I-15)

2 - If unconscious/unstable, defer vascular access until after cardioversion.

3 - If conscious, consider analgesia prior to cardioversion: Morphine Sulfate 0.1 mg/kg IVP ≤ 65 years of age - max dose 10 mg OR Fentanyl 1 mcg/kg IVP ≤ 65 years of age - max dose 100 mcg > 65 years of age - max dose 5 mg

> 65 years of age - max dose 50 mcg

4 – All patients with wide complex tachycardia should be transported to a STEMI Center

- For renal patients with suspected hyperkalemia, consider: Calcium Chloride 1 AMP IV/IO (10 ml of 10% solution)
  Sodium Bicarb 1 AMP IV/IO (50 ml [50 mEq] of 8.4% solution)

- For suspected tricyclic antidepressant overdose consider: Sodium Bicarb 1 AMP IV/IO (50 ml [50 mEq] of 8.4% solution)
NARROW COMPLEX TACHYCARDIA - ALS
(Pulse >150)

1 – See ECG procedure (ALS Appendix I-15)

2 – If unconscious/unstable, defer vascular access until after cardioversion.

3 - If conscious, consider analgesia prior to cardioversion: Morphine Sulfate 0.1 mg/kg IVP
- ≤ 65 years of age - max dose 10 mg
- > 65 years of age - max dose 5 mg

OR

Fentanyl 1 mcg/kg IVP
- ≤ 65 years of age - max dose 100 mcg
- > 65 years of age - max dose 50 mcg

4 - Use antecubital if possible. Also, follow rapid IV injection with immediate 10 ml flush of NS.

5 - If history of reactive airway/asthma/COPD, contact Online Medical Control prior to use of adenosine.
BRADYCARDIA WITH PULSE - ALS (Pulse <50)

1 – See ECG procedure (ALS Appendix I-15)
2 – If unconscious/unstable, defer vascular access until transcutaneous pacing is initiated.
3 – See Transcutaneous Pacing procedure (ALS Appendix I-14)
4 – Transport to STEMI Center if high grade AV block (2nd or 3rd degree) or if patient requires transcutaneous pacing

• Hypoxia is a common cause of bradycardia. Initial evaluation should focus on signs of increased work of breathing and treatment should be directed at improving oxygenation with supplemental oxygen and, if necessary, BVM ventilation.
1 – Patients with a Ventricular Assist Device (VAD) often do not have a peripheral pulse, O2 saturation, or a palpable blood pressure. Use other indicators of adequate perfusion such as mental status, skin color and condition, and respiratory rate and effort.

2 - Unresponsive and apneic with no signs of life

3 – Refer to VAD transport policy C.20
SYNCOPE OR PRESYNCOPE* - ALS

1 – See ECG procedure (ALS Appendix I-15)

* Syncope is heralded by both the loss of consciousness and the loss of postural tone and resolves spontaneously without medical interventions. Syncope is typically abrupt in onset and resolves equally quickly. Presyncope is defined as the prodromal symptoms of syncope. It usually lasts for seconds to minutes and may be described by the patient as “nearly blacking out” or “nearly fainting.” Patients with ongoing mental status changes or coma should be treated per the Altered Mental Status SMO (ALS D-1).
RESPIRATORY

Respiratory Distress  C-1
Respiratory Obstruction  C-2
Allergic Reaction and/or Anaphylaxis  C-3
Suspected Carbon Monoxide Poisoning  C-4
RESPIRATORY DISTRESS - ALS

RMC

Secure and maintain airway

Adequate airway/respiratory effort?

NO, RR < 10 and/or Decreased LOC

Assist airway with ventilation via BVM

Suction

Monitor

Establish vascular access

YES, RR ≥ 10

Assess lung sounds, Wheezing?

YES

NO

Albuterol 2.5 mg MIXED WITH Atrovent 0.5 mg via nebulizer
Repeat Albuterol as needed

Consider CPAP for moderate or severe respiratory distress if available

Consider Epinephrine 0.3 mg 1:1,000 IM as rescue therapy

Consider 12 lead ECG

Transport and contact Medical Control as appropriate

NO

Continue RMC

See appropriate SMO

Consider 12 lead ECG

Transport and contact Medical Control as appropriate

NOTE: Complete lack of breath sounds may indicate severe bronchoconstriction
RESPIRATORY OBSTRUCTION - ALS

RMC

Conscious?

NO

Open airway and attempt to ventilate

Successful?

NO, Continued Obstruction

Attempt to clear airway by direct laryngoscopy utilize forceps and/or suction

CPR

Establish advanced airway
Needle cricothyrotomy if unable to ventilate

Transport and contact Medical Control as appropriate

YES

Transport and Base contact Medical Control as appropriate

Able to speak?

NO

Continue ventilation as needed

Monitor Establish vascular access

YES

Abdominal thrusts or chest thrusts if not effective or if victim is pregnant or obese

Continue until relieved

Monitor Establish vascular access

Allow to cough
ALLERGIC REACTION and/or ANAPHYLAXIS - ALS

RMC

Secure and maintain airway

Severity of reaction?

SEVERE SYMPTOMS OR > 1 MILD SYMPTOM* SINGLE MILD SYMPTOM**

Monitor
Establish vascular access

Epinephrine 0.3mg
1:1,000 IM
(May repeat x 1 in 5-10 min)

Benadryl 50 mg IM

Benadryl 50mg IV

If wheezing, Albuterol 2.5 mg
MIXED WITH Atrovent 0.5 mg via nebulizer
Repeat Albuterol as needed

Administer fluid bolus 300 ml if BP < 100
Repeat as indicated

Sustained severity/deterioration?

Epinephrine 0.1mg as 1ml
1:10,000, IV
Repeat every 5 minutes as indicated

Transport and contact Medical Control as appropriate

*Severe symptoms of an allergic reaction may include any combination of the following:

RESPIRATORY – Shortness of breath, wheezing, repetitive coughing
CARDIOVASCULAR – Pale, cyanotic, low blood pressure, dizzy
THROAT – Tightness, hoarse, trouble breathing/swallowing
MOUTH – Swelling of the tongue and/or lips
SKIN – Diffuse hives or redness
GI – Repetitive vomiting, severe diarrhea
NEURO – Anxiety, confusion, sense of doom

**Mild symptoms of an allergic reaction may include any combination of the following:

NOSE – Itchy/runny nose, sneezing
MOUTH – Itching
SKIN – Few hives, mild itching
GI – Mild nausea/discomfort

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ALS C-3
SUSPECTED CARBON MONOXIDE POISONING - ALS

RMC

Obtain CO reading, if available

Monitor
Establish vascular access

Transport and contact
Medical Control as appropriate
MEDICAL

Altered Mental Status  D-1
Seizures  D-2
Suspected Acute Stroke  D-3
Behavioral Emergency  D-4
Acute Nausea & Vomiting  D-5
Pain Management  D-6
Taser/Electrical Weapon Device Exposure  D-7
Non-Cardiogenic/Non-Traumatic Shock  D-8
Renal Patients  D-9
Suspected COVID-19 Protocol (ALS/BLS)  D-10.1 to D-10.5
ALTERED MENTAL STATUS - ALS

1 - Dextrose 50% 50ml IV OR
Dextrose 10% as 100ml boluses until mental status improves or BS > 60 to a maximum of 500ml
SEIZURES - ALS

RMC

Monitor
Establish vascular access

Check Blood Sugar

BS ≤ 60

Dextrose¹ or Glucagon 1 mg IM/IN

BS > 60

IV Established?

YES

If seizure activity persists,
Midazolam 2-5 mg IV² (repeat X1 after 5 min)

Assess level of consciousness/GCS
during post-ictal period

Spinal immobilization as indicated
(See Appendix)

Transport and contact Medical Control
as appropriate

NO

Midazolam³
10 mg/2 ml IN
5 mg/1 ml IM

1 - Dextrose 50% 50ml IV OR
Dextrose 10% as 100ml boluses until mental status improves or BS > 60 to a maximum of 500ml

2 – Alternative to midazolam: diazepam 2-5 mg IV OR lorazepam 2 mg IV slow
3 – Alternative to midazolam: lorazepam 2 mg IM

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ALS D-2
SUSPECTED ACUTE STROKE – ALS

1 - Dextrose 50% 50ml IV OR
Dextrose 10% as 100ml boluses until mental status improves or BS > 60 to a maximum of 500ml

*Cincinnati Stroke Scale (CSS)*
Positive CSS = One or more of the following are abnormal:

1. Facial Droop
   - Have patient show teeth or smile
   - Abnormal = One side does not move as the other

2. Arm Drift
   - Have patient close eyes and hold arms out for 10 seconds with palms up
   - Abnormal = One arm does not move or drifts down

3. Abnormal Speech
   - Have patient say, “You can’t teach an old dog new tricks”
   - Abnormal = Patient slurs word, uses wrong words or is unable to speak

**Finger-to-Nose (FTN)**
Have the patient touch their nose and then the provider’s finger repeatedly, with each hand. A normal exam is one where the patient can smoothly touch their nose and the provider’s finger.

An abnormal exam is one where the patient demonstrates dysmetria (unable to touch finger following a straight path) on either side or both.

***3-Item Stroke Scale (3I-SS)***
The 3I-SS is scored 0-6. Assign a score from 0 to 2 for each of the three parts of the assessment. Add each section for the total score.

1. Level of Consciousness (AVPU)
   - 0 = Alert
   - 1 = Arousable to voice only
   - 2 = Arousable to noxious stimuli only or unresponsive

2. Gaze Preference
   - 0 = Normal eye movements
   - 1 = Prefers to look to one side, but can move eyes to both sides
   - 2 = Eyes are fixed in one direction

3. Motor Function
   - 0 = Normal strength in arms and legs
   - 1 = Can lift arm or leg, but cannot hold arm/leg up for 10 seconds
   - 2 = None or minimal movement of arm or leg
Assure sufficient resources to contain and restrain patient in supine position

Consider midazolam (1, 2, 3)
2 mg IV (may repeat X 1)
5 mg IM/IN

Continued monitor airway

Assess for medical emergency and/or trauma if possible
See appropriate SMO

Check Blood Sugar if possible and treat as appropriate

Transport and contact Medical Control as appropriate

1 – Despite the use of de-escalation techniques and physical restraints in which the patient remains extremely combative and physically dangerous to themselves and others and patient is < 60 years of age.

2 – If patient is > 60 years of age, contact Base Station for approval.

3 – Alternative to midazolam: lorazepam 2 mg IM
ACUTE NAUSEA & VOMITING - ALS

Place in upright or lateral recumbent position as tolerated

Assess for signs of hypoperfusion
If found, establish access and administer
Normal Saline fluid bolus
300 mL to maintain BP ≥ 100 systolic
Check blood glucose

If suspected ACS, perform 12-lead ECG and cardiac monitor

Consider
Ondansetron 4 mg IV/PO¹,²,³
(maximum dose of 4 mg)

Transport and contact Medical Control as appropriate

1 – Avoid in patients with known or suspected prolonged QT, congenital heart disease or surgery, or severe hepatic impairment as these patients are at risk for Torsades de Pointes.
2 – Studies have shown safety in appropriate doses for Ondansetron in pregnancy.
3 – Nausea and vomiting are symptoms of illness. Investigate for underlying causes which are not limited to: gastrointestinal, cardiovascular, gynecologic, hypoglycemia, and hyperglycemia.
1 – Contraindications include known or documented allergy to fentanyl, morphine or other opioid analgesic, pregnancy with active labor, dental pain, chronic pain patients who are not part of hospice or palliative care, hypoventilation or respiratory depression.

2 – Use with caution in patients with GCS < 15, hypotension, or hypoxia
TASER / ELECTRICAL WEAPON DEVICE EXPOSURE – ALS

Note: This protocol is to be used for patients who have been subdued by the use of any conductive electrical weapon device (e.g. TASER)

RMC
Monitor
Establish vascular access

If the patient fell, assess for head/neck/spinal injury
Spinal Immobilization as indicated
(See Appendix)

Monitor patient for:
Seizure Activity
Chest Pain
Altered LOC

Secure Taser Barb
DO NOT REMOVE BARB
Stabilize with gauze/tape
Identify location of probes on the patient’s body

Transport\(^1\)\(^,\)\(^2\) and contact Medical Control as appropriate

---

1 – Patient will be transported to the closest comprehensive Emergency Department.
2 –Patients who are in police custody must be accompanied to the hospital by appropriate law enforcement personnel.
NON-TRAUMATIC SHOCK - ALS

1 – At Base Station discretion

RMC

Monitor
Establish vascular access

NS wide open 300 ml bolus unless evidence of pulmonary edema
Repeat as indicated

Maintain BP ≥ 100

Consider 12 lead ECG

Transport and contact Medical Control as appropriate
RENAL PATIENTS - ALS

Patients with Chronic Renal Failure and Receiving Hemodialysis or Peritoneal Dialysis

RMC

Obtain history including:
- Type of dialysis: hemodialysis or peritoneal?
- When last dialyzed?
- Was dialysis complete?
- Access type of hemodialysis vascular access: catheter or fistula?

Establish vascular access
- Monitor

Adult patients with QRS wider than 0.12 seconds, administer
  Calcium Chloride 1 amp IVP

Adult patients in cardiac arrest, administer
  Calcium Chloride 1 amp IVP
  Sodium Bicarbonate 1 amp IVP

See appropriate SMO

Transport and contact Medical Control as appropriate

1 - Vascular access should not be attempted in same extremity having a functioning fistula. Fluids should be administered cautiously. If vascular access is needed emergently and a peripheral IV cannot be obtained, a functioning dialysis catheter can be used when in place by attaching IV tubing to the port.
REGION 11 CHICAGO EMS SYSTEM
Suspected COVID-19 Protocol (ALS/BLS)

I. PATIENT CARE GOALS

A. To identify the proper EMS assessment, treatment, and transport for patients at risk for COVID-19 infection within the Region 11 EMS System.

B. To follow current CDC, IDPH, and CDPH guidelines.

C. To minimize any possible exposure of COVID-19 to EMS providers, Emergency Department staff, or any other patients or family in the healthcare setting.

II. PATIENT MANAGEMENT

A. CASE IDENTIFICATION

1. COVID-19 identification is primarily based on fever and/or symptoms of acute respiratory illness (e.g. cough and difficulty breathing), but patients may also have other viral syndrome symptoms such as chills, myalgias (muscle aches), rhinorrhea (runny nose), sore throat, nausea, vomiting, headache, abdominal pain, and diarrhea. Atypical presentations with any of the above symptoms should be considered.

2. Higher risk patients for COVID-19 includes those with close contact with a COVID-19 positive patient, recent travel to areas with widespread COVID-19, living in close quarters, healthcare workers, chronic medical conditions or immunocompromised state.

3. Emergency Medical Dispatchers (OEMC) should screen calls for suspected COVID-19 and communicate to EMS prior to their arrival on scene to allow for use of proper PPE.

B. PPE GUIDELINES

1. EMS providers should apply proper PPE per CDC guidelines.

   a. Surgical facemasks are an acceptable alternative if N-95 or higher level respirators are in short supply.

   b. Respirators/N-95s should be prioritized for procedures that are likely to generate respiratory aerosols, which would pose the highest exposure risk to the healthcare provider.

   c. Eye protection. (i.e. goggles or disposable face shields that fully covers the front and side of face. Personal eyeglasses are not considered adequate eye protection).
d. **Gloves.** A single pair of disposable patient examination gloves that should be changed if torn or heavily contaminated.

e. **Isolation gown.** If there is a shortage of gowns it should be prioritized for aerosol generating procedures, care activities where splashes and sprays are anticipated and high contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothes of EMS providers (e.g. moving patient onto stretcher).

2. After patient handoff at the hospital, EMS providers should safely remove PPE to prevent contamination. Discard PPE in accordance with routine procedures and perform good hand hygiene.

C. SUSPECTED COVID-19 PATIENT ASSESSMENT

1. Initial Assessment

   a. EMS providers should exercise appropriate precautions when responding to a call with signs or symptoms of a respiratory infection and apply proper PPE before entering the scene.

   b. For patients with suspected COVID-19, EMS providers should avoid exposure of multiple personnel if possible.

   c. Initial assessment should begin at a distance of at least 6 feet from the patient and a facemask should be placed on the patient for source control.

   d. Patient contact should be minimized to the extent possible until a facemask is on the patient.

2. Patient Assessment

   a. Perform Adult or Pediatric Assessment

   b. Travel history

   c. COVID-19 exposure history

   d. Past medical history

   e. Vital signs

   f. Physical examination

3. Procedures

   a. **Aerosol-Generating Procedures should be to minimized to reduce virus transmission unless exhibiting signs of severe respiratory illness.**

   b. EMS providers should exercise caution when an aerosol-generating procedure is necessary, an N-95 or higher level respirator should be used by EMS providers performing aerosol-generating procedures including bag valve mask (BVM) ventilation, oropharyngeal suctioning, nebulizer treatment, continuous positive airway pressure (CPAP) or resuscitation involving CPR.
c. If possible, Aerosol Generating Procedures should be done with the rear doors of the ambulance open and the HVAC system active or in a negative pressure room away from patient care areas.

d. At the hospital, nebulizers and CPAP should be temporarily discontinued between the ambulance and the patient room to minimize disease transmission.

e. BVMs and other ventilator equipment should be equipped with HEPA or other viral filter to filter expired air if available.

4. Treatment
   a. **Oxygenation**
      i. Maintain SpO2 > 90%.
      ii. Nasal cannula with surgical mask over the cannula is the preferred method of oxygenation. May use higher than normal flow rates (up to 7 liters per minute) if needed to maintain desired oxygen saturation.
      iii. If persistently hypoxic despite nasal cannula apply non-rebreather.

   b. **Nebulization Therapy**
      i. Restrict nebulizer treatments to patients who are exhibiting signs of severe respiratory distress.
      ii. Metered dose inhaler (MDI) with a spacer, if available, is the preferred route for medication administration
         1. Consider 4-6 puffs per dose of MDI with spacer, if available, may repeat every 5 minutes as needed.
         2. Use of patient’s MDI with spacer if available is preferred.

   c. **Continuous Positive Airway Pressure (CPAP)** should be used with caution in suspected COVID-19 patients due to increased transmission risk.

   d. **Endotracheal intubation** should be avoided in suspected COVID-19 patients due to increased transmission risk. Supraglottic airway placement should be performed for advanced airway management during resuscitation.

   e. **Epinephrine**: For patients with severe respiratory distress and wheezing, epinephrine IM can be used for rescue therapy.

5. Transportation of Suspected COVID-19 Patients
   a. Transport to the closest appropriate Emergency Department.
b. Close door/window between driver and patient compartment.

c. During transport, vehicle ventilation in both compartments should be on non-circulated mode and rear exhaust fan on.

d. If a vehicle without an isolated patient compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to create a negative patient gradient in the patient area.

e. Online Medical Control should be consulted for any questions regarding patient care and all refusals of transport.

f. Pre-notification to the receiving hospital is mandatory to allow for room and equipment preparation.

g. EMS must coordinate with receiving hospital staff prior to entering the hospital to minimize exposure.

h. Family members and contacts should not ride in the ambulance if possible, but should wear a mask if their presence is critical for patient care.

III. DOCUMENTATION


   1. For CFD select “Suspected Case of Corona/COVID-19” on the Special Event/Situation tag under Incident.

B. Document all EMS and public safety providers involved in the care of a suspected COVID-19 patient, level of contact, and level of PPE worn during treatment for follow-up of testing results.

C. Positive COVID-19 tests should be reported from the hospital to local health department. The hospital should notify the EMS Agency Designated Infection Control Officer to facilitate appropriate follow-up for agency personnel.

D. EMS Agencies should develop policies for assessing exposure risk and management of EMS providers that are exposed to and that become infected with COVID-19.

III. CLEANING

A. After patient transport, leave the rear doors of the ambulance open to remove potentially infectious particles. The time to complete patient transfer, cleaning, and documentation should provide sufficient air changes.

B. Routine cleaning and disinfectant procedures are appropriate. When cleaning the vehicle, EMS providers should wear a disposable gown and gloves. A facemask and eye protection should be used if splashes or sprays during cleaning are anticipated.
C. All surfaces that may have come in contact with the patient or materials contaminated during patient care should be thoroughly cleaned and disinfected (e.g. stretcher, rails, control panels, floors, walls, work surfaces).

D. EPA registered disinfectants for emerging viral pathogens should be used.

IV. RESTOCKING

A. EMS agencies should maintain a stock of PPE for their EMS providers as the primary means of replacement.

B. Hospitals should replace individual PPE after patient transport if the same level of PPE is available.
ENVIRONMENTAL

Frostbite E-1
Hypothermia E-2
Heat Illness E-3
Burns E-4.1 to E-4.3
Haz Mat / Toxic Exposure E-5
Crush Injury E-6.1
Hazardous Events / Suspected Biological E-6.2
Hazardous Events / Chemical E-6.3
Hazardous Events / Cyanokit Antidote Administration E-6.4
FROSTBITE - ALS

Prevent further injury/handle gently
Move patient to warm environment
Remove wet clothing

Protect injured part (blisters) with light sterile dressing
Avoid pressure to area
Handle as you would a burn

Prevent re-exposure to cold or refreezing of part

Do not rub part
Do not use artificial heat
Do not use tight dressing

Assess pain severity and treat
per pain management protocol

Transport and contact Medical Control as appropriate
1 - May present with altered sensorium or unconscious. Heart more susceptible to dysrhythmias. May have apnea, dusky or cyanotic appearance, fixed and dilated pupils; may appear without signs of life.

2 – An individual in a frozen state is not considered salvageable.

3 – The suspected hypothermic patient shall never be declared dead in the field.

4 - Dextrose 50% 50ml IV OR
   Dextrose 10% as 100ml boluses until mental status improves or BS > 60 to a maximum of 500ml
HEAT ILLNESS - ALS

RMC

Place in cool environment

Mental status?

ALTERED

Monitor

Establish vascular access
**NS 300 ml** to maintain **BP ≥ 100**

If blood sugar < 60,
**Dextrose**¹
Or Glucagon 1 mg IM/IN

Remove all clothing and cover with wet sheets
Monitor for seizure activity

Transport and contact Medical Control as appropriate

NORMAL

Blood pressure?

**BP < 100**

Monitor

Establish vascular access
**NS 300 ml** to maintain **BP ≥ 100**

Transport and Base Station contact as appropriate

**BP ≥ 100**

Remove all clothing

Establish vascular access
**NS 300 ml** to maintain **BP ≥ 100**

Transport and contact Medical Control as appropriate

¹ - Dextrose 50% 50ml IV **OR**
Dextrose 10% as 100ml boluses until mental status improves or BS > 60 to a maximum of 500ml
BURNS - ALS

RMC

Assess singed facial hair, hoarseness, wheezing, cough or stridor

Airway compromise?

YES

Consider intubation early if signs of distress

Monitor
Establish vascular access

NO

Consider CPAP for moderate or severe respiratory distress if available

Albuterol 2.5 mg mixed with Atrovent 0.5 mg via nebulizer if indicated

Remove clothing
Clothing should be cut, not pulled off
Smoldering clothing should be extinguished with water
Remove all accessories and jewelry
Do not attempt to cool patient

Estimate BSA

Cover with dry dressings or sheet

Establish vascular access
Fluid as per ABA Guidelines

Assess pain severity and treat per pain management protocol

Transport and contact Medical Control as appropriate

1American Burn Association (ABA)
Pre-hospital Fluid Management Guidelines

≤ 5 years 125 ml NS / hour
6-13 years 250 ml NS / hour
≥ 14 years 500 ml NS / hour
ELECTRICAL BURNS - ALS

Assure scene safety
Remove patient from source of electricity or have power service cut off

RMC

Establish vascular access
Monitor

Monitor and treat arrhythmia per appropriate SMO

Spinal immobilization as indicated
(See Appendix)

See Burns SMO

Transport and contact Medical Control as appropriate
CHEMICAL BURNS - ALS

Assure scene safety
Remove patient from source as necessary

Notify Fire Department Haz Mat Team as appropriate

RMC
See Burns SMO

Burn location?

EYE
SKIN

Substance form?

SOLID

Flush eyes continuously with Normal Saline throughout transport

Brush off

LIQUID

Flush with Normal Saline

Transport and contact Medical Control as appropriate

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
HAZ MAT / TOXIC EXPOSURE - ALS

Protect yourself, maintain a safe distance upwind of site

Notify Fire Department Haz Mat Team of any potential biological, chemical or radiation exposure

Do not enter area unless declared safe by Haz Mat Team

Contact Illinois Poison Center as indicated (800)222-1222

RMC

See appropriate SMO

Bring container(s) of drug or substance to the ED (provided that it is not a Haz Mat substance)

Transport and contact Medical Control as appropriate

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
CRUSH INJURY - ALS

RTC

Significant crush injury or prolonged entrapment of an extremity?

YES

Establish vascular access

Normal Saline initial bolus of 10-15 mL/kg (prior to extrication if possible)

1 amp Sodium Bicarbonate in 1 liter Normal Saline and infuse wide open

Attach Cardiac Monitor
Carefully monitor for dysrhythmia or signs of hyperkalemia before and immediately after release of pressure and during transport

If peaked T waves, wide QRS, or loss of P-waves
Calcium Chloride 1 amp
Sodium Bicarbonate 1 amp
All as slow IVP

NO

Post-extrication continue resuscitation with Normal Saline (1,000 mL/hour)

Transport and contact Medical Control as appropriate

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
HAZARDOUS EVENTS / SUSPECTED BIOLOGICAL - ALS

RMC

Field or ED personnel: Note increase in patients with “similar type symptoms”

Don PPE and place surgical mask on patient
See ABT card

Notify Resource Hospital/Field Officer

Transport and contact Medical Control as appropriate

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
HAZARDOUS EVENTS / CHEMICAL - ALS

Notify Haz Mat Team
Decontamination by Haz Mat Team

RTC

Administer antidotes as prescribed*

Chemical type?

**Blister agents**
(Mustard)

**Blood agents**
(Cyanide)

Monitor

Establish vascular access

Sodium Nitrite 300 mg IVP
over 5 minutes

Follow immediately by
Sodium Thiosulfate 12.5 g IVP
over 5 minutes

If toxic S/S reappear, administer
Sodium Nitrite and Sodium
Thiosulfate at ½ original dose

**Choking agents**
(Phosgene/Chlorine)

Monitor

Establish vascular access

Albuterol 2.5 mg nebulized
as indicated if wheezing

Consider CPAP for moderate
or severe respiratory
distress if available

**Nerve agents**
(Sarin, Soman, VX)

Monitor

Frequent suction

Atropine 2 mg IM
and titrate until desired effect
seen

2 PAM IM
(repeat injection up to 3x’s)

For seizures, follow
Seizure SMO (ALS D-2)
Consider CPAP for moderate
or severe respiratory
if available

**See Respiratory Distress SMO**

NO DIURETICS

**Blister agents**
(Mustard)

Establish vascular access

Albuterol 2.5 mg nebulized
as indicated

Consider CPAP for moderate
or severe respiratory
distress if available

**See Respiratory Distress SMO**

**Transport and contact Medical Control as appropriate**

* Drugs to be supplied through Field Officer

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
Known/Suspected Cyanide Poisoning
(Patient exposure to fire/smoke in enclosed area OR suspected intentional release)

YES

Start 2nd IV line

Prepare Cyanokit – 5 grams
1 Kit = 2.5GM vial mixed in Saline 100 ml bag
Infuse over 7.5 minutes

Continual Patient Assessment

Transport and contact Medical Control as appropriate

NO

Continue Hi-Flo oxygen

Continual Patient Assessment

NOTES:
- The Cyanokit will be stored on Mass Casualty Vehicles and will be utilized, as available, for mass casualty events when Cyanide poisoning is suspected
- If prolonged scene time, contact Base Station for possible administration of a 2nd Cyanokit – 5 grams
- In the event of an allergic/adverse reaction (anaphylaxis, chest tightness, dyspnea, edema, rash) contact Base Station

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
TRAUMA

Routine Trauma Care (RTC) F-1
   Head Trauma F-2
   Spinal Trauma F-3
   Trauma Airway F-4
   Chest Trauma F-5
   Extremity Trauma F-6
   Trauma in Pregnancy F-7
   Traumatic Hemorrhagic Shock F-8
   Traumatic Arrest F-9
ROUTINE TRAUMA CARE (RTC) - ALS

Scene Safety & Universal Precautions (BSI)

Assess level of consciousness (GCS)

Secure and maintain airway
Stabilize C-spine as appropriate (see Spinal Immobilization in Appendix)

Administer oxygen per appropriate method
to maintain oxygen saturation ≥ 94%
For patients with respiratory distress, shock, smoke inhalation, carbon monoxide poisoning, or cardiac arrest, administer high flow oxygen 15 L by most appropriate method
(See Appendix for approved oxygen delivery methods)

Assess and control bleeding

Minimize scene time
Further assessment and treatment will take place during transport

Obtain vital signs
AED, cardiac monitor, pulse oximetry and capnography as appropriate
Establish vascular access enroute
Maintain systolic BP ≥ 90
Assess pain using pain scale (0-10)
Obtain history
See appropriate SMO
Apply Trauma Field Triage Criteria decision scheme to determine appropriate transport destination (see Trauma Transport Policy)

Transport and contact Medical Control as appropriate
HEAD TRAUMA - ALS

RTC

Assess level of consciousness (GCS)

Altered level of consciousness?

YES

Assess respiratory effort and assist ventilation as indicated
Monitor for seizure activity

Spinal Immobilization as indicated
(See Appendix)

Establish vascular access enroute

Check Blood Sugar

BS ≤ 60 mg/dl

Dextrose¹ or Glucagon 1 mg IM/IN/IO

BS > 60 mg/dl

Transport and contact Medical Control as appropriate

NO

Spinal Immobilization as indicated
(See Appendix)

Establish vascular access enroute

Check Blood Sugar

BS ≤ 60 mg/dl

Dextrose¹ or Glucagon 1 mg IM/IN/IO

BS > 60 mg/dl

Transport and contact Medical Control as appropriate

¹ - Dextrose 50% 50ml IV OR
Dextrose 10% as 100ml boluses until mental status improves or BS > 60 to a maximum of 500ml
SPINAL TRAUMA - ALS

RTC

- Immobilize per Spinal Immobilization (See Appendix)

- Extricate as necessary

- Assess motor and sensory function

- Assess circulation to extremities

- Establish vascular access enroute

- Transport and contact Medical Control as appropriate
TRIUMA AIRWAY - ALS

RTC

Maintain airway with c-spine control

Adequate ventilation?

NO

Assess respiratory effort
Consider OP/NP
BVM / Advanced Airway / Cricothyrotomy as indicated
Suction as needed

See appropriate SMO for injury

YES

See appropriate SMO for injury

Establish vascular access enroute

Transport and contact Medical Control as appropriate
CHEST TRAUMA - ALS

RTC

Type of trauma?

Traumatic arrest

Tension pneumothorax

Sucking chest wound

Other trauma

Bilateral needle decompression

Needle decompression to affected side

Occlusive dressing (tape on 3 sides)

Assess respiratory effort

Consider OP/NP

BVM / Advanced Airway / Cricothyrotomy as indicated

Spinal Immobilization as indicated

(See Appendix)

Establish vascular access enroute

Monitor for the development of tension pneumothorax

Transport and contact Medical Control as appropriate
RTC

Assess neurovascular status: pulse, sensation, motor function, capillary refill

Manage hemorrhage per protocol

AMPUTATION?

For amputated parts, place in dry gauze in plastic bag. Place bag on cold pack and transport with patient

SUSPECTED FRACTURE OR DISLOCATION?

If distal vascular function is compromised, gently attempt to restore normal anatomic position

Use splints as appropriate to limit movement of suspected fracture

Elevate extremity fractures above heart level whenever possible to reduce swelling

Apply ice/cold packs to limit swelling in suspected fractures or soft tissue injury

Do not apply ice directly to skin

Reassess distal neurovascular status after any manipulation or swelling

Assess pain severity and treat per pain management protocol

Transport and contact Medical Control as appropriate
TRAUMA IN PREGNANCY - ALS

RTC

Position patient on left side and/or tilt board to left

See appropriate SMO

Transport and contact Medical Control as appropriate
RTC

Establish vascular access

NS 300 ml IV bolus enroute
Repeat as indicated

Maintain BP ≥ 90

Transport and contact Medical Control as appropriate
1 - “Sign of life” is any respiration, a palpable pulse, a pupillary response, or spontaneous movement.

2 - Exclusion criteria: drowning or strangulation, lightening strike or electrocution, situations involving hypothermia, patients with visible pregnancy, medical conditions as the likely cause of cardiac arrest.

3 - If EMS provider decides to continue resuscitation, the patient should be transported to the closest Level 1 trauma center.

4 - If the EMS provider decides to withhold resuscitation, they may choose to transport to the closest comprehensive ED for various reasons, including scene safety, unless the police declare a crime scene.
OBSTETRICS

Emergency Childbirth  G-1
Postpartum Care   G-2.1 to G-2.2
Obstetrical Complications  G-3.1 to G-3.5
Neonatal Resuscitation  G4
Obtain patient history and document any of the following:
1. Rectal pressure
2. Contractions less than or equal to 2 minutes apart
3. Uncomfortable and unable to ambulate
4. Vaginal bleeding
5. Ruptured membranes
6. Uncontrollable urge to push

Any of the above present?

YES

Check for crowning

Crowning present?

YES

Prepare for birth

Control delivery of head with palm of hand so it does not emerge too quickly

Check for cord around the neck
If present, refer to Nuchal Cord SMO (G 3.4)

Guide head and neck as upper shoulders are delivered

Support baby as body delivers

See Postpartum Care SMO

NO

Monitor for above

Time contractions

Contact Medical Control and transport to ED with an approved OB facility

NO

Place patient on left side

Time contractions

Contact Medical Control and transport to ED with an approved OB facility
POSTPARTUM CARE - ALS

BABY

Note time of delivery

PRMC

Keep newborn level with mother’s vagina until cord clamped

Wipe face

Dry and wrap warmly in blanket

Clamp umbilical cord securely in two places about 6-8" from baby and cut between 2 clamps

If non-vigorous or in respiratory distress, proceed to Neonatal Resuscitation SMO (G4)

Assess Apgar score at 1 and 5 minutes after birth (see next page)

Contact Medical Control and transport to ED with an approved OB facility

MOTHER

RMC

Maintain BP ≥ 90
Establish vascular access, if indicated
NS wide open 300 ml bolus
Repeat as indicated

If placenta delivers, note time of delivery and place in a plastic bag
Do not delay transport waiting for placenta
Do NOT pull on cord to facilitate placenta delivery

If heavy vaginal bleeding, gently massage uterus with your hand on abdomen

If perineum is torn or bleeding, apply direct pressure with trauma dressing

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Revised: 8/92; 11/94; 12/95; 6/97; 12/97; 3/98; 9/98; 1/99; 3/00; 3/09; 5/11; 10/15
IDPH Approval: 8/86; 12/3/91; 11/16/92; 12/19/94; 2/20/96; Summer 99; 5/00; 7/30/05; 6/29/11; 2/29/16
Implementation: 8/86; 1/1/92; 3/1/93; 3/1/95; 5/1/96; 8/1/99; 10/00; 1/1/10; 4/1/12; 3/1/16

ALS G-2.1
### APGAR SCORING

<table>
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<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>1 Min</th>
<th>5 Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>A=Appearance (color)</td>
<td>Blue, pale</td>
<td>Blue hands and feet</td>
<td>Entirely pink</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P=Pulse (heart rate)</td>
<td>Absent</td>
<td>&lt;100/min</td>
<td>≥100/min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G=Grimace (reflex irritability)</td>
<td>No response</td>
<td>Grimace</td>
<td>Cough or sneeze</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A=Activity (muscle tone)</td>
<td>Limp</td>
<td>Some flexion of extremities</td>
<td>Active motion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R=Respiratory effort</td>
<td>Absent</td>
<td>Weak cry, hypoventilation</td>
<td>Good, strong cry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTALS =**
OBSTETRICAL COMPLICATIONS - ALS

BLEEDING IN PREGNANCY

RMC

Establish vascular access

Place mother on left side if ≥ 20 weeks gestation

Note type and amount of external bleeding and/or discharge

NS wide open 300 ml bolus
Repeat as indicated

Maintain BP ≥ 90

Alert Medical Control of OB complications
Transport to ED with an approved OB facility if ≥ 20 weeks gestation
OBSTETRICAL COMPLICATIONS - ALS

BREECH BIRTH

RMC

Never attempt to pull the baby from the vagina by the legs or trunk

As soon as legs are delivered, support baby's body and wrap in towel

After shoulders are delivered, gently elevate trunk and legs to aid in delivery of head (if face down)

If head has not delivered in 30 seconds with the next contraction, continue supporting the body and reach 2 sterile gloved fingers into vagina to locate infant's mouth.
Press vaginal wall away from baby's mouth to form an airway.
Until head delivers, keep your hand in position

Alert Medical Control of OB complications
Transport to ED with an approved OB facility
OBSTETRICAL COMPLICATIONS - ALS

PROLAPSED CORD

RMC

- Elevate mother’s hips, knee-chest position, or left side down, Trendelenberg position.

- Protect cord from being compressed by placing a sterile gloved hand in vagina and supporting the presenting part until transfer of patient care.

- Keep exposed cord moist and warm (may use sterile NS).

- Alert Medical Control of OB complications
  Transport to ED with an approved OB facility
NUCHAL CORD

RMC

Slip two fingers under the cord and lift over baby’s head

Successful?

NO

Double clamp cord, cut cord between clamps to allow for release of cord from neck

YES

Follow normal delivery procedures

Alert Medical Control of OB complications
Transport to ED with an approved OB facility
OBSTETRICAL COMPLICATIONS - ALS

PRE-ECLAMPSIA OR TOXEMIA (ECLAMPSIA)

RMC

Establish vascular access
Monitor

Place mother on left side

Minimal central nervous system stimulation

Seizure precautions

If patient is actively seizing administer
Versed 2 mg increments IV (max 10 mg) until seizure stops¹
OR
If no IV, give Versed 10 mg/2 ml IN²

Alert Medical Control of OB complications
Transport to ED with an approved OB facility

¹ – Alternative to Versed: Valium 2 mg increments IV (max 10 mg) until seizure stops OR Ativan 2 mg increments IV (max 4 mg) until seizure stops
² – Alternative to Versed: Ativan 2 mg IM
NEONATAL RESUSCITATION - ALS

Deliver head and body
Clamp/cut cord

Dry
Clear Airway
Warm
Position and stimulate

Check respirations, heart rate, and color

Apneic, HR < 100, Baby not vigorous

Cyanotic and Breathing

Pink and Breathing, HR > 100

Meconium Present?

Supplemental oxygen at 5-10 L

Heart Rate?

NO

HR < 100

YES

Gently suction mouth and nose of infant with a bulb syringe

HR ≥ 100

Support ABCs
Keep warm

Positive pressure ventilations at 40-60 breathes per minute with supplemental oxygen at 5-10 L

Heart rate after 30 seconds of positive pressure ventilation?

NO

HR < 60

Continue Ventilation
Support ABCs
Keep warm

HR ≥ 60

Chest compressions for 30 seconds (3:1 ratio compressions/ventilations)

Epinephrine 0.3 ml IV/IO
1:10,000
Repeat q 3-5 min

HR < 60

Continue CPR
Keep warm
Consider 10 ml/kg fluid bolus

Check blood sugar
If BS < 45 administer Dextrose 10% 15 ml IV using buretrol

HR ≥ 60

Support ABCs
Keep warm

1 – Corrective action steps to improve positive pressure ventilation:
M: Mask Adjustment
R: Reposition Airway
S: Suction Mouth & Nose
O: Open Mouth
P: Pressure Increase
A: Airway Alternative

Alert Medical Control
Transport to ED with an approved OB facility
PEDIATRICS

Pediatric Initial Assessment  H-1.1 to H-1.5
Pediatric Routine Medical Care (PRMC)  H-2
Pediatric Routine Trauma Care (PRTC)  H-3
Ventricular Fibrillation & Pulseless Ventricular Tachycardia  H-4
  Pulseless Electrical Activity/Asystole  H-5
  Wide Complex Tachycardia  H-6
  Narrow QRS Complex Tachycardia  H-7
  Bradycardia  H-8
  Respiratory Distress  H-9
  Respiratory Obstruction  H-10
Allergic Reaction and/or Anaphylaxis  H-11
Tracheostomy with Respiratory Distress  H-12
  Suspected Croup or Epiglottitis  H-13
  Altered Mental Status  H-14
  Seizures  H-15
  Acute Nausea & Vomiting  H-16
  Pain Management  H.17
  Extremity Trauma  H-18
  Non-Traumatic Shock  H-19
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  Burns  H-22.1 to H-22.4
  Haz Mat / Toxic Exposure  H-23.1
  Hazardous Events / Nuclear/Blast Injuries  H-23.2
  Hazardous Events / Suspected Biological  H-23.3
  Hazardous Events / Chemical  H-23.4
  Hazardous Events/ Nerve Agents  H-23.5
  Near Drowning  H-24
Pediatric Drug Dosing Dose Reference Guide  H-25.1 to H-25.2
Region XI Pediatric Resuscitation Card  H-26 to H-27
I. SCENE SIZE-UP

A. Protect from body substance through isolation (glasses, gloves, gown and mask).

B. Assess the scene for safety and take appropriate steps.

C. Determine the mechanism of injury/nature of illness.
   1. Note the number of patients.
   2. Initiate Mass Casualty Plan, if necessary.
      a. Call for additional personnel and equipment.
      b. Begin triage.
   3. Assess for any indication of abuse or neglect of the patient (See policy “Reporting Abused and/or Neglected Patients”)

II. INITIAL ASSESSMENT OF PEDIATRIC PATIENT

A. Assess general impression of child and environment with initial assessment of wellness and general appearance (conduct from a distance). Complete assessment while protecting the cervical spine, if necessary.
   1. Determine nature of illness or mechanism of injury.
   2. Is child in a life threatening condition? Treat immediately. Refer to Broselow tape if needed.
   3. Obtain SAMPLE history and identify any caregivers at scene.

B. Assess child's mental status.
   1. Identify yourself and your purpose using age appropriate terms.
   2. Initially approach child in non-threatening manner, on their level when appropriate. Initiate touch in a non-threatening manner, before examining child when appropriate.
   3. Evaluate child's mental status utilizing Pediatric Coma Scale.

C. Assess airway
   1. Responsive Child
PEDIATRIC INITIAL ASSESSMENT (cont.)

a. If child is talking or crying, then assess for adequacy of breathing.
b. If child is not talking or crying, open airway using modified jaw thrust maneuver.

2. Unresponsive Child

a. Open the airway using modified jaw thrust maneuver.
b. Consider use of oral airway.

D. Assess Breathing

1. Non-breathing child

a. Maintain open airway and assist breathing utilizing ventilatory adjuncts and oxygen at the appropriate rate.
b. Suction if necessary.
c. Pulse oximeter

2. Breathing child

a. Look for rise and fall of chest and feel for rate and depth of breathing.
b. Look for use of accessory muscles, nasal flaring, grunting and retractions.
c. Determine adequacy of breathing for age (either too fast or too slow).
d. If breathing is inadequate, assist breathing utilizing ventilatory adjuncts and oxygen at the appropriate rate.
e. Suction if necessary.
f. Pulse oximeter (if indicated)

PEDIATRIC VITAL SIGNS

Weight in kg = (2 x age in years) + 10

<table>
<thead>
<tr>
<th>Age</th>
<th>Pulse</th>
<th>Systolic Blood Pressure</th>
<th>Respiratory Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonate (0-30 days)</td>
<td>100-180</td>
<td>&gt; 60</td>
<td>30-60</td>
</tr>
<tr>
<td>Infant (31 days - &lt; 1yr)</td>
<td>100-160</td>
<td>&gt; 60</td>
<td>30-60</td>
</tr>
<tr>
<td>Toddler (1 yr - &lt; 3 yrs)</td>
<td>90-150</td>
<td>&gt; 70</td>
<td>24-40</td>
</tr>
<tr>
<td>Pre-School (3 yrs - &lt; 5 yrs)</td>
<td>80-140</td>
<td>&gt; 75</td>
<td>22-34</td>
</tr>
<tr>
<td>School Age (5 yrs – 12 yrs)</td>
<td>70-120</td>
<td>&gt; 80</td>
<td>18-30</td>
</tr>
<tr>
<td>Adolescent ( &gt; 12 yrs)</td>
<td>60-100</td>
<td>&gt; 90</td>
<td>12-16</td>
</tr>
</tbody>
</table>
E. Assess Circulation

INDICATORS OF HYPOPERFUSION IN CHILDREN

- Cyanosis despite administration of oxygen
- Truncal pallor/cyanosis and coolness
- Hypotension (late sign)
- Bradycardia (ominous sign)
- Weak, thready, or absent peripheral pulses
- No palpable blood pressure
- Decreasing level of consciousness

1. Check brachial or femoral pulse for rate and quality.

2. If none found, check for carotid pulse. If pulseless, start CPR and see appropriate SMO.

3. Assess for central capillary refill.


5. Assess and control severe bleeding.

F. Identify priority pediatric patients for immediate transport and initiate interventions as per SMOs.

G. Repeat initial assessment.

1. Every 15 minutes in a stable child.

2. Every 5 minutes in an unstable child.

3. Repeat before beginning detailed physical examination.

H. Initiate measures to prevent heat loss to keep the child from becoming hypothermic.

I. For children with special healthcare needs (CSHN), refer as needed to child’s emergency care plan. Understanding the child’s baseline will assist in determining the significance of altered physical findings.
## PEDIATRIC INITIAL ASSESSMENT (cont.)

### PEDIATRIC GLASGOW COMA SCALE (PGCS)

<table>
<thead>
<tr>
<th></th>
<th>&gt; 1 Year</th>
<th>&lt; 1 Year</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EYE OPENING</strong></td>
<td>Spontaneously</td>
<td>Spontaneously</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>To verbal command</td>
<td>To shout</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>To pain</td>
<td>To pain</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No response</td>
<td>No response</td>
<td>1</td>
</tr>
<tr>
<td><strong>MOTOR RESPONSE</strong></td>
<td>Obeys</td>
<td>Spontaneous</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Localizes pain</td>
<td>Localizes pain</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Flexion-withdrawal</td>
<td>Flexion-withdrawal</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Flexion-abnormal (decorticate rigidity)</td>
<td>Flexion-abnormal (decorticate rigidity)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Extension (decerebrate rigidity)</td>
<td>Extension (decerebrate rigidity)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No response</td>
<td>No response</td>
<td>1</td>
</tr>
<tr>
<td><strong>VERBAL RESPONSE</strong></td>
<td>Oriented</td>
<td>Appropriate words/phrases</td>
<td>Smiles/coos appropriately</td>
</tr>
<tr>
<td></td>
<td>Disoriented/confused</td>
<td>Inappropriate words</td>
<td>Cries and is consolable</td>
</tr>
<tr>
<td></td>
<td>Inappropriate words</td>
<td>Persistent cries and screams</td>
<td>Persistent inappropriate crying and/or screaming</td>
</tr>
<tr>
<td></td>
<td>Incomprehensible sounds</td>
<td>Grunts</td>
<td>Grunts, agitated, and restless</td>
</tr>
<tr>
<td></td>
<td>No response</td>
<td>No response</td>
<td>No response</td>
</tr>
</tbody>
</table>

**TOTAL PEDIATRIC GLASGOW COMA SCORE:** (3-15)

### PEDIATRIC PAIN SCALE

- **0** No Hurt
- **1** Hurts Little Bit
- **2** Hurts Little More
- **3** Hurts Even More
- **4** Hurts Whole Lot
- **5** Hurts Worst

ALS H-1.4
Scene Safety & Universal Precautions (BSI)

Assess level of consciousness (PGCS)

Secure and maintain airway

Administer oxygen per appropriate method to maintain oxygen saturation ≥ 94%

For patients with respiratory distress, shock, smoke inhalation, carbon monoxide poisoning, or cardiac arrest, administer high flow oxygen 15 L by most appropriate method (See Appendix for approved oxygen delivery methods)

Obtain vital signs

AED, cardiac monitor, pulse oximetry and capnography as appropriate per SMO

Assess for hypoperfusion

Prevent heat loss/decreased body temperature

Assess pain using pain scale

Obtain history

See appropriate SMO

Initiate patient care per Initiation of Patient Care policy

Reference Broselow Tape

Transport and contact Medical Control as appropriate

1 – See Pediatric Initial Assessment
Scene Safety & Universal Precautions (BSI)

Assess level of consciousness (PGCS)¹

Secure and maintain airway
C-spine stabilization as appropriate

Administer oxygen per appropriate method
to maintain oxygen saturation ≥ 94%

For patients with respiratory distress, shock, smoke inhalation, carbon monoxide poisoning, or cardiac arrest, administer high flow oxygen 15 L by most appropriate method
(See Appendix for approved oxygen delivery methods)

Assess and control bleeding

Obtain vital signs¹

AED, cardiac monitor, pulse oximetry and capnography as appropriate per SMO

Maintain systolic BP (2 X age in years +80) with NS as indicated

Assess for hypoperfusion¹

Prevent heat loss/decreased body temperature

Assess for pain using pain scale¹

Obtain history

See appropriate SMO

Initiate patient care per Initiation of Patient Care policy

Apply Trauma Field Triage Criteria decision scheme to determine appropriate transport destination (see Trauma Transport Policy)

Reference Broselow Tape

Transport and contact Medical Control as appropriate

¹ – See Pediatric Initial Assessment
Confirm unresponsiveness and check ABCs
If pulseless begin CPR

Monitor

Confirm V-fib/V-tach

Defibrillate 2 J/kg

CPR for 2 minutes

Check rhythm

VF/VT?

YES

Defibrillate 4 J/kg

Consider advanced airway

CPR for 2 minutes

Establish vascular access

Epinephrine 0.1 ml/kg (0.01mg/kg) IV/IO 1:10,000
Repeat every 3 to 5 minutes

Check rhythm

Defibrillate @ 4 J/kg

CPR for 2 minutes

Amiodarone 5 mg/kg IV/IO
May repeat X2
(Max dose 300 mg)

Check rhythm

Defibrillate @ 4 J/kg

CPR for 2 minutes

Transport and contact Medical Control as appropriate

NO

Pulse present?

NO

YES

See appropriate SMO

Transport and contact Medical Control as appropriate

1 – Pediatric CPR rates: 1 rescuer = 30 compressions: 2 ventilations
2 rescuers = 15 compressions: 2 ventilations

2 – Consider endotracheal drug administration, if vascular access unavailable
Epinephrine 0.1 ml/kg (0.1 mg/kg) ET 1:1,000
Confirm unresponsiveness and check ABCs
If pulseless begin CPR (x2 min)

Monitor

Consider advanced airway
Establish vascular access

Epinephrine
0.1 ml/kg (0.01 mg/kg) IV/IO 1:10,000
Repeat every 3 to 5 minutes

Check rhythm
If pulseless, resume CPR

Consider cause and initiate specific treatment
(see chart)

Transport and Base contact Medical Control as appropriate

1 – Pediatric CPR rates: 1 rescuer = 30 compressions: 2 ventilations
2 rescuers = 15 compressions: 2 ventilations

2 – Consider endotracheal drug administration, if vascular access unavailable
Epinephrine 0.1 ml/kg (0.1 mg/kg) ET 1:1,000

CAUSES

<table>
<thead>
<tr>
<th>CAUSES</th>
<th>SPECIFIC TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoxemia</td>
<td>Check ET and ventilation</td>
</tr>
<tr>
<td>Tension pneumothorax</td>
<td>Needle thoracentesis</td>
</tr>
<tr>
<td>Toxicity/O.D.</td>
<td>Naloxone</td>
</tr>
<tr>
<td></td>
<td>≤ 20 kg: 0.1 mg/kg, IV/IO</td>
</tr>
<tr>
<td></td>
<td>&gt; 20 kg: 2.0 mg/dose, IV/IO</td>
</tr>
<tr>
<td>Dialysis patient/Renal failure/</td>
<td>Contact Base Station</td>
</tr>
<tr>
<td>Hyperkalemia</td>
<td></td>
</tr>
<tr>
<td>Hypovolemia</td>
<td>Normal Saline bolus 20 ml/kg</td>
</tr>
<tr>
<td>Metabolic acidosis</td>
<td></td>
</tr>
<tr>
<td>prolonged down time</td>
<td>Contact Base Station</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dextrose 10% 5ml/kg using buretrol</td>
</tr>
</tbody>
</table>
WIDE COMPLEX TACHYCARDIA - PEDIATRIC - ALS

PRMC

Monitor

Pulse present?

NO

See VF/VT or PEA SMO

YES

Cardiac compromise?

NO

Transport and contact Medical Control as appropriate

YES

Synchronized cardioversion 0.5 J/kg to 1 J/kg

Repeat cardioversion 2 J/kg as needed

See appropriate SMO

Transport and contact Medical Control as appropriate

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MDC Approval: 4/98; 2/99; 6/00; 4/7/09; 9/7/10; 10/5/15
IDPH Approval: 1/99; Summer 99; 8/00; 7/9/09; 11/24/10; 2/25/16
Implementation: 8/1/99; 10/00; 1/1/10; 3/1/11; 3/1/16

ALS H-6
NARROW QRS COMPLEX TACHYCARDIA - PEDIATRIC - ALS

- PRMC
  - Monitor
    - Pulse present?
      - NO
        - See VF/VT or PEA SMO
      - YES
        - Probable Sinus Tach
          Infant rate: Usually <220 bpm
          Child rate: Usually <180 bpm
          Probable cause?
            - Probable SVT
              Infant rate: Usually <220 bpm (Probable Sinus Tach)
              Child rate: Usually <180 bpm
              Consider cause and initiate specific treatment (see chart)
            - Consider vagal maneuvers
              Able to establish vascular access?
                - NO, or Cardio compromise
                  Synchronized cardioversion
                  0.5 J/kg to 1 J/kg
                  Repeat cardioversion 2 J/kg as needed
                - YES
                  Adenosine 0.1 mg/kg IV/IO
                  (maximum first dose 6 mg)
                  Follow with Normal Saline bolus 2-5 ml
                  May repeat Adenosine dose
                  Adenosine 0.2 mg/kg IV/IO
                  (maximum dose 12 mg)
                  Follow with Normal Saline bolus 2-5 ml
                  If Adenosine fails to convert,
                  reevaluate rhythm
                  Consider cardioversion
                  Assess pain severity and
                  treat per pain management protocol
                  Transport and contact Medical Control as appropriate

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Written: 3/98
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Revised: 2/99; 6/00; 3/09; 5/14; 10/15; 5/16; 5/19
MDC Approval: 4/98; 2/99; 6/99; 4/7/09; 5/19/14; 10/5/15; 6/7/16; 6/4/19
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Implementation: 8/1/99; 10/00; 1/1/10; 6/1/15; 3/1/16; 10/17/16; 11/1/19
ALS H-7
BRADYCARDIA - PEDIATRIC - ALS
(Pulse < 60)

PRMC
Monitor

Severe cardiorespiratory compromise?

YES
If despite oxygen and ventilation, pulse is ≤ 60 then perform chest compressions

Establish vascular access

Epinephrine
0.1 ml/kg (0.01 mg/kg) IV/IO 1:10,000
0.1 ml/kg (0.1 mg/kg) ET 1:1,000
Repeat every 3 to 5 minutes

Is rhythm AV block?

YES
Atropine 0.02 mg/kg IV/IO
(Maximum single dose: 0.5 mg)
May repeat once

NO
See appropriate SMO

NO
Observe
Support ABCs

Transport and contact Medical Control as appropriate

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Revised: 3/09; 10/15; 5/19
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IDPH Approval: 7/9/09; 2/25/16; 7/15/19
Implementation: 1/1/10; 3/1/16; 11/1/19

ALS H-8
RESPIRATORY DISTRESS - PEDIATRIC - ALS

Secure and maintain airway

Adequate airway/respiratory effort?

NO, and/or Decreased LOC

Assist airway with ventilation via BVM Suction

Monitor Establish vascular access

Assess lung sounds. Wheezing?

YES NO

Albuterol 2.5 mg via nebulizer (consider mixing with Atrovent 0.5 mg via nebulizer) Repeat Albuterol as needed

If severe distress: Consider Epinephrine 0.01 ml/kg (0.01 mg/kg) IM 1:1,000 (Maximum 0.3mg per single dose)

Transport and contact Medical Control as appropriate

NOTE: If patient has an established tracheostomy, see Tracheostomy with Respiratory Distress SMO
NOTE: Complete lack of breath sounds may indicate severe bronchoconstriction
Conscious?

NO

Open airway and attempt to ventilate

Successful?

NO, Continued obstruction

YES, Airway open

Attempt to clear airway by direct laryngoscopy
Utilize forceps and/or suction

Monitor

If patient becomes unconscious begin CPR

Establish advanced airway
Needle cricothyrotomy if unable to ventilate

Establish vascular access

Transport and contact Medical Control as appropriate

YES

Able to speak or make sounds?

NO

Establish vascular access

YES

< 1 year: 5 back slaps and 5 chest thrusts
≥ 1 year: abdominal thrusts

Continue until relieved

If patient becomes unconscious begin CPR

Allow to cough

1 – Pediatric CPR rates: 1 rescuer = 30 compressions: 2 ventilations
2 rescuers = 15 compressions: 2 ventilations

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Written: 5/99 based on adult SMO
Reviewed: 3/09; 6/11; 10/15
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Implementation: 8/1/99; 1/1/10; 4/1/12; 3/1/16
ALS H-10
ALLERGIC REACTION and/or ANAPHYLAXIS - PEDIATRIC - ALS

**Severe symptoms of an allergic reaction may include any combination of the following:**

RESPIRATORY – Shortness of breath, wheezing, repetitive coughing
CARDIOVASCULAR – Pale, cyanotic, low blood pressure, dizzy
THROAT – Tightness, hoarse, trouble breathing/swallowing
MOUTH – Swelling of the tongue and/or lips
SKIN - Diffuse hives or redness
GI – Repetitive vomiting, severe diarrhea
NEURO – Anxiety, confusion, sense of doom

**Mild symptoms of an allergic reaction may include any combination of the following:**

NOSE – Itchy/runny nose, sneezing
MOUTH – Itching
SKIN - Few hives, mild itching
GI – Mild nausea/discomfort

PRMC

Secure and maintain airway

Severity of reaction?

SEVERE SYMPTOMS OR > 1 MILD SYMPTOM*

SINGLE MILD SYMPTOM**

Transport and contact Medical Control as appropriate

Monitor
Establish vascular access

Epinephrine
0.01 ml/kg (0.01 mg/kg) IM 1:1,000
(Maximum 0.3mg per single dose)

Benadryl 1 mg/kg IM/IV/IO
(Maximum 50mg)

If wheezing, Albuterol 2.5 mg via nebulizer
Repeat Albuterol as needed

Administer fluid bolus 20 ml/kg
Repeat as indicated

Sustained severity/deterioration?

Repeat Epinephrine
0.01 ml/kg (0.01 mg/kg) IM 1:1,000
(Maximum 0.3mg per single dose)

Sustained severity/deterioration?

Epinephrine 0.1 ml/kg (0.01 mg/kg) IV/IO 1:10,000
Repeat every 5 minutes as indicated

Transport and contact Medical Control as appropriate

*Severe symptoms of an allergic reaction may include any combination of the following:

RESPIRATORY – Shortness of breath, wheezing, repetitive coughing
CARDIOVASCULAR – Pale, cyanotic, low blood pressure, dizzy
THROAT – Tightness, hoarse, trouble breathing/swallowing
MOUTH – Swelling of the tongue and/or lips
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MDC Approval: 5/98; 5/99; 6/00; 1/02; 6/04; 4/7/09; 9/7/11; 10/5/15; 12/6/16
IDPH Approval: 1/99; Summer 99; 8/00; 5/02; 9/04; 7/9/09; 9/29/11; 2/25/16; 1/12/17
Implementation: 8/1/99; 10/00; 1/1/03; 1/1/05; 1/1/10; 4/1/12; 3/1/16; 4/1/17

ALS H-11
NOTE: If chest raise inadequate using mask to stoma, consider depressing pop-off valve or switching to an adult bag to increase volume and pressure.

1 – Pediatric CPR rates: 1 rescuer = 30 compressions: 2 ventilations
2 rescuers = 15 compressions: 2 ventilations
Do not agitate child
Keep patient calm and upright

Attempt to administer oxygen with mask held by parent or guardian 4 inches in front of child’s face only if well tolerated by child

DO NOT ATTEMPT AN IV/IO

See Respiratory Distress SMO

Transport and contact Medical Control as appropriate
ALtered Mental Status - Pediatric - ALS

PRMC

Spinal immobilization as indicated (See Appendix)

Monitor
Establish vascular access

Consider Normal Saline bolus 20 ml/kg

Check Blood Sugar

BS ≤ 60 mg/dl

Dextrose:
Dextrose 10% 5ml/kg using buretrol

or IM Glucagon:
≤8 years: Glucagon 0.5 mg IM
>8 years: Glucagon 1 mg IM

or Oral Glucose (if gag reflex is intact):
1 mo – 4 years: ¼ tube
4-8 years: ½ tube
>8 years: 1 tube

BS > 60 mg/dl

Assess for respiratory effort

If signs of opioid intoxication with respiratory depression administer Naloxone
≤ 20 kg: 0.1 mg/kg IV/IO/IM/IN
> 20 kg: 2 mg/dose

Consider other causes of altered mental status

Transport and contact Medical Control as appropriate

Special Considerations:
Consider causes:

A Alcohol, abuse
E Epilepsy, electrolytes, encephalopathy
I Insulin
O Opiates, overdose
U Uremia

T Trauma, temperature
I Infection, intussusception, inborn errors
P Psychogenic
P Poison
S Shock, seizures, stroke, space-occupying lesion, subarachnoid hemorrhage, shunt
SEIZURES - PEDIATRIC - ALS

PRMC

Monitor
Establish vascular access

Protect from injury
Aspiration precautions

Check Blood Sugar

BS ≤ 60

Dextrose:
Dextrose 10% 5ml/kg using buretrol
or IM Glucagon:
≤ 8 years: Glucagon 0.5 mg IM
> 8 years: Glucagon 1 mg IM

BS > 60

IV Established?

YES

If seizure activity persists,
Midazolam 0.1 mg/kg IV/IO \(^1\)
(< 6 years: maximum total dose 6 mg)
(≥ 6 years: maximum total dose 10 mg)

Assess level of consciousness (PGCS)
during post-ictal period

Support ABCs

Transport and contact Medical Control as appropriate

NO

Midazolam\(^2\)
0.2 mg/kg IN or 0.1 mg/kg IM
(maximum total dose 5 mg)

Transport and contact Medical Control as appropriate

1 – Alternative to midazolam IV: diazepam 0.1-0.3 mg/kg IV over 2-3 minutes, every 5 minutes (< 5 years: maximum total dose 5 mg) (≥ 5 years: maximum total dose 10 mg) OR lorazepam 0.1 mg/kg IV/IO May repeat X1 (maximum single dose 2 mg, maximum total dose 4 mg)

2 – Alternative to midazolam IM/IN: lorazepam 0.1 mg/kg IM

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ALS H-15
ACUTE NAUSEA & VOMITING – PEDIATRIC - ALS

Place in upright or lateral recumbent position as tolerated

Assess for signs of hypoperfusion\(^1\)
If found, establish access and administer
Normal Saline fluid bolus 20 mL/kg
Check blood glucose

For age > 1 year old AND > 10 kg, consider
Ondansetron 0.15 mg/kg slow IV\(^2,3\)

OR

For age > 1 year old AND > 25 kg, consider
Ondansetron 4 mg oral disintegrating tab (ODT)\(^2,3\)

Transport and contact Medical Control as appropriate

---

1 - See indicators of hypoperfusion in Pediatric Initial Assessment (ALS H-1).
2 – Avoid in patients with known or suspected prolonged QT, congenital heart disease or surgery, or severe hepatic impairment as these patients are at risk for Torsades de Pointes.
3 – Nausea and vomiting are symptoms of illness. Investigate for underlying causes which are not limited to: gastrointestinal, cardiovascular, gynecologic, hypoglycemia, and hyperglycemia.
1 – Contraindications include known or documented allergy to fentanyl, morphine or other opioid analgesic, pregnancy with active labor, dental pain, chronic pain patients who are not part of hospice or palliative care, hypoventilation or respiratory depression.

2 – Use with caution in patients with GCS < 15, hypotension, or hypoxia
**EXTREMITY TRAUMA - PEDIATRIC - ALS**

**PRTC**

-Assess pulse, sensation and motor function

**BLUNT TRAUMA**

Assess if open wounds present

Bandage/Splint

Document neurovascular function after splinting

Establish vascular access
NS fluid bolus 20 ml/kg IV (non-injured extremity)

Assess pain severity and treat per pain management protocol

**AMPUTATION**

Stump or partial amputation?

Maintain with stump as able (don’t complete amputation)

Wrap in saline moistened gauze
Place in a plastic bag

**PENETRATING TRAUMA**

Severed part?

Apply direct pressure

Bandage (maintain impaled object in place)

Establish vascular access
NS fluid bolus 20 ml/kg IV (non-injured extremity)

Document neurovascular function after bandaging

Assess pain severity and treat per pain management protocol

**Transport and contact Medical Control as appropriate**
Secure airway as appropriate  
Supine or shock position

Determine etiology of shock

**OBSTRUCTIVE SHOCK**  
(Tension Pneumothorax)

Establish vascular access

Administer fluid bolus  
20 ml/kg

If suspected allergic reaction, see Allergic Reaction and/or Anaphylaxis SMO

If no response to initial fluid bolus and history of fever/infection, repeat fluid boluses of 20 ml/kg as indicated to a max of 60 ml/kg

**DISTRIBUTIVE SHOCK**  
(Suspected sepsis/anaphylaxis)

Establish vascular access

Administer fluid bolus  
20 ml/kg

If suspected allergic reaction, see Allergic Reaction and/or Anaphylaxis SMO

**CARDIOGENIC SHOCK**  
(History congenital heart disease/cardiac surgery/rhythm disturbance/post-cardiac arrest)

Establish vascular access

Identify any cardiac rhythm disturbance and refer to appropriate cardiac SMO

If no response to initial fluid bolus and history of fever/infection, repeat fluid boluses of 20 ml/kg as indicated to a max of 60 ml/kg

**HYPOVOLEMIC SHOCK**  
(Suspected dehydration/volume loss/hemorrhagic shock)

Establish vascular access

Administer fluid bolus  
20 ml/kg

If no response to initial fluid bolus, repeat at 20 ml/kg as indicated to a max of 60 ml/kg

Control bleeding as appropriate

Support ABCs
Observe  
Keep warm

Transport and contact Medical Control as appropriate

**Special Considerations:**
Caution – fluids may need to be restricted in Cardiogenic shock.
HYPOTHERMIA - PEDIATRIC - ALS

NOTES:  - May present with altered sensorium or as unconscious.  Heart more susceptible to dysrhythmias.  May have apnea, dusky or cyanotic appearance, fixed and dilated pupils; may appear without signs of life.  
- An individual in a frozen state is not considered salvageable.  
- The suspected hypothermic patient shall never be declared dead in the field.

1 – Pediatric CPR rates:  1 rescuer  = 30 compressions: 2 ventilations  
                2 rescuers = 15 compressions: 2 ventilations

---

**Diagram**

- **PRMC**
- **Monitor**
- **Handle gently**
  - Move patient to warm environment
  - Remove wet clothing

**Breathing AND pulse?**

**NO**

- **CPR**
  - Defibrillation @ 2 J/kg if in VF
  - CPR/BVM

**YES**

- **Establish vascular access**
  - Consider Dextrose: Dextrose 10% 5ml/kg using buretrol
  - Consider Altered Mental Status SMO

- **Rewarm patient with blanket(s) and warm packs**
  - (no direct skin contact with axilla, trunk, groin)

- **Transport and contact Medical Control as appropriate**
RPMC

Place in cool environment
Remove clothing as appropriate

Altered Mental Status?
OR
Nausea/vomiting?

YES, Altered and/or Nausea/Vomiting present

Establish vascular access

NS fluid bolus 20 ml/kg
Repeat X2 as needed to maintain systolic BP
(2 x age in years + 80)

NO, Normal & No Nausea/Vomiting present

Transport and contact Medical Control as appropriate

NOTE: Capillary refill may NOT be a reliable indicator when the patient’s temperature is > 104 degrees
BURNS - PEDIATRIC - ALS

PRMC

Assess singed facial hair, hoarseness, wheezing, cough or stridor

Airway compromise?

YES

Consider intubation early if signs of distress

Monitor

NO

Consider Albuterol if indicated

Remove clothing
Remove all accessories and jewelry
Do not attempt to cool patient

Estimate extent and depth of burn

Cover with dry dressings or sheet

Establish vascular access

NS fluid bolus 20 ml/kg
Repeat X2 as needed to maintain systolic BP
(2 X age in years + 80)

Assess pain severity and treat per pain management protocol

Transport and contact Medical Control as appropriate

1 – See next page for Pediatric Burns % Body Surface Area
% Body Surface Area

Palm of hand (including fingers) of infant or child = 1% of the total body surface

Any patient with a life threatening condition should be treated until stable at the nearest appropriate facility before being transferred to a burn center.
Assure scene safety
Remove patient from source of electricity or have power service cut off

PRMC

Monitor

For suspect life-threatening dysrhythmia, monitor and treat per appropriate SMO

Spinal Immobilization as indicated
(See Appendix)

Transport and contact Medical Control as appropriate
Assure scene safety and remove patient from source as necessary

Notify Fire Department Haz Mat Team as appropriate

PRMC

Burn location?

EYE SKIN

Substance form?

SOLID LIQUID

Flush eyes continuously with Normal Saline throughout transport

Brush off excess chemical

Remove clothing

Remove clothing

Flush with Normal Saline/water

Transport and contact Medical Control as appropriate

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
Protect yourself, maintain a safe distance upwind of site

Notify Fire Department Haz Mat Team of any potential biological, chemical or radiation exposure

Do not enter area unless declared safe by Haz Mat Team

Contact Illinois Poison Center as indicated
(800) 222-1222

PRMC

See appropriate SMO

Bring containers of drug or substance to the ED along with MSDS form if available (provided that it is not a Haz Mat substance)

Transport and contact Medical Control as appropriate

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
HAZ MAT / NUCLEAR-BLAST INJURIES - PEDIATRIC - ALS

1. Notify Haz Mat Team
   Decontamination by Haz Mat Team

2. PRTC

3. Crush injury with victim still entrapped?
   YES
   Establish vascular access
   NS fluid bolus 20 ml/kg
   Repeat X2 as needed to maintain systolic BP
   
   (2 X age in years + 80)

   Attach Cardiac Monitor
   Carefully monitor for dysrhythmia or signs of hyperkalemia before and immediately after release of pressure and during transport

   If peaked T waves, wide QRS, or loss of P-waves contact Medical Control
   Consider Calcium Chloride 20 mg/kg IVP

   Immobilize patient
   Transport and contact Medical Control as appropriate

4. NO

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
Field or ED personnel: Note increase in patients with “similar type symptoms”

Don PPE and place surgical mask on patient
See ABT card

Notify Resource Hospital/Field Officer

Transport and contact Medical Control as appropriate

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
HAZ MAT / CHEMICAL - PEDIATRIC - ALS

Notify Fire Department Haz Mat Team
Decontamination by Haz Mat Team

PRTC

Chemical type?

Blood Agents
(Cyanide)

Monitor

Amyl Nitrite 1 amp
via inhalation
q 3 minutes¹

Establish vascular access

Sodium Nitrite
6-9 mg/kg IV/IO¹

Follow immediately by Sodium
Thiosulfate
400 mg/kg IV/IO¹

Choking Agents
(Phosgene/Chlorine)

Monitor

Albuterol
2.5 mg nebulized
as indicated

NO DIURETICS

See Respiratory Distress SMO

Blister Agents
(Mustard)

Monitor

Albuterol
2.5 mg nebulized
as indicated

See Respiratory Distress SMO

Transport and contact Medical Control as appropriate

¹ – If available, CyanoKit 70 mg/kg IV up to 5 gms

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
Establish vascular access

Exposure?

MILD EXPOSURE
SOB, Wheezing, Runny Nose

MODERATE EXPOSURE
Vomiting, Drooling, Pinpoint Pupils

SEVERE EXPOSURE
Unconscious, cyanosis, seizures

Infant 0-6 mths ( < 7 kg)
Atropine: 0.25 mg IM/IV
2 PAM: 15 mg/kg IM/IV

Infant 7 mths - 2 yrs (7-13 kg)
Atropine: 0.5 mg IM/IV
2 PAM: 15 mg/kg IM/IV

Child 3 yrs – 7 yrs (14-25 kg)
Atropine: 1 mg IM/IV
2 PAM: 300 mg

Child 8 yrs – 14 yrs (26-50 kg)
Atropine: 2 mg IM/IV
2 PAM: 600 mg

Infant 0-6 mths ( < 7 kg)
Atropine: 0.5 mg IM/IV
2 PAM: 25 mg/kg IM/IV

Infant 7 mths – 2 yrs (7-13 kg)
Atropine: 1 mg IM/IV
2 PAM: 300 mg IM/IV

Child 3 yrs – 7 yrs (14-25 kg)
Atropine: 2 mg IM/IV
2 PAM: 600 mg

Child 8 yrs – 14 yrs (26-50 kg)
Atropine: 2 mg IM/IV
2 PAM: 600 mg

If seizure activity, follow Pediatric Seizure SMO H-15

Transport and contact Medical Control as appropriate

* All efforts should be made to decontaminate the patient prior to transport, as appropriate per HazMat team.
NEAR DROWNING - PEDIATRIC - ALS

Assess ABCs
Start CPR if necessary¹

Monitor

Spinal Immobilization as indicated
(See Appendix)

Remove wet clothing
Warm patient

Transport and contact Medical Control
as appropriate

¹ – Pediatric CPR rates: 1 rescuer = 30 compressions: 2 ventilations
2 rescuers = 15 compressions: 2 ventilations
# PEDIATRIC DRUG DOSING
## DOSE REFERENCE GUIDE - ALS

Weight in kg = (2 x age in years) + 10

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE</th>
<th>MODE</th>
<th>INTERVAL/ RATE</th>
<th>MAX SINGLE DOSE</th>
<th>PREP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADENOSINE</td>
<td>0.1-0.2 mg/kg</td>
<td>IV/IO</td>
<td>X 1</td>
<td>12 mg</td>
<td>6 mg/2 ml</td>
</tr>
<tr>
<td>ALBUTEROL</td>
<td>2.5 mg</td>
<td>Nebulizer</td>
<td>X 1</td>
<td>2.5 mg</td>
<td>2.5 mg/3 ml</td>
</tr>
<tr>
<td>AMIODARONE</td>
<td>5 mg/kg</td>
<td>IV/IO</td>
<td>may repeat initial dose X2</td>
<td>300 mg</td>
<td>150 mg/3 ml</td>
</tr>
<tr>
<td>ATIVAN</td>
<td>0.1 mg/kg</td>
<td>IV/IO/IN/IM</td>
<td>X1</td>
<td>4 mg</td>
<td>2 mg/1 ml</td>
</tr>
<tr>
<td>ATROPINE</td>
<td>0.02 mg/kg (minimum dose: 0.1mg)</td>
<td>IV/ET/IO</td>
<td>q 5 min total of 1mg</td>
<td>0.5 mg child 1 mg adolescent</td>
<td>1mg /10 ml</td>
</tr>
<tr>
<td>ATROVENT</td>
<td>0.5 mg</td>
<td>Nebulizer</td>
<td>X 1</td>
<td>0.5 mg</td>
<td>0.5 mg/3 ml</td>
</tr>
<tr>
<td>BENADRYL</td>
<td>1 mg/kg</td>
<td>IV/IO/IM</td>
<td>X1</td>
<td>50 mg</td>
<td>50 mg/1 ml</td>
</tr>
<tr>
<td>CALCIUM CHLORIDE 10%</td>
<td>20 mg/kg</td>
<td>IV/IO slow</td>
<td>q 10 min x 1</td>
<td>300 mg</td>
<td>10% solution 100 mg/ml</td>
</tr>
<tr>
<td>DEXTROSE 10% (All Ages)</td>
<td>5 ml/kg</td>
<td>IV/IO</td>
<td>as indicated</td>
<td></td>
<td>D10% W using buretrol</td>
</tr>
<tr>
<td>EPINEPHRINE 1:1,000</td>
<td>0.01 mg/kg (= 0.01 ml/kg)</td>
<td>SQ/IM</td>
<td>q 20 min</td>
<td>0.3 mg</td>
<td>1 mg/1 ml</td>
</tr>
<tr>
<td>EPINEPHRINE 1:1,000</td>
<td>0.1 mg/kg (= 0.1 ml/kg)</td>
<td>ET</td>
<td>q 3-5 min</td>
<td>10 ml</td>
<td>1 mg/1 ml If volume is &lt;3 ml flush w/3 ml NS</td>
</tr>
<tr>
<td>EPINEPHRINE 1:10,000</td>
<td>0.01 mg/kg (= 0.1 ml/kg)</td>
<td>IV/IO</td>
<td>q 3-5 min</td>
<td>5-10 ml</td>
<td>1 mg/10 ml</td>
</tr>
</tbody>
</table>
**PEDIATRIC DRUG DOSING -- DOSE REFERENCE GUIDE (Con’t.)**

Weight in kg = (2 x age in years) + 10

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE</th>
<th>MODE</th>
<th>INTERVAL/ RATE</th>
<th>MAX SINGLE DOSE</th>
<th>DOSE PREP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLUCAGON</td>
<td>0.1 mg/kg</td>
<td>IM</td>
<td>X 1</td>
<td>1 mg</td>
<td>1 mg powder</td>
</tr>
<tr>
<td>GLUCOSE, ORAL</td>
<td>¼ tube</td>
<td>PO</td>
<td>as indicated</td>
<td>25 gm/tube</td>
<td></td>
</tr>
<tr>
<td>GLUCOSE, ORAL</td>
<td>½ tube</td>
<td>PO</td>
<td>as indicated</td>
<td>25 gm/tube</td>
<td></td>
</tr>
<tr>
<td>GLUCOSE, ORAL</td>
<td>1 tube</td>
<td>PO</td>
<td>as indicated</td>
<td>25 gm/tube</td>
<td></td>
</tr>
<tr>
<td>MORPHINE</td>
<td>0.1 mg/kg</td>
<td>IV/IO/IM</td>
<td>q 5 min</td>
<td>10mg</td>
<td>10 mg/10 ml</td>
</tr>
<tr>
<td>NALOXONE</td>
<td>0.1 mg/kg</td>
<td>IV/ET/IO/IM</td>
<td></td>
<td>2mg</td>
<td>2 mg/2 ml</td>
</tr>
<tr>
<td>VALIUM</td>
<td>0.1-0.3 mg/kg</td>
<td>IV/IO</td>
<td>slow push</td>
<td>&lt; 5 yrs. 5mg</td>
<td>10 mg/2 ml</td>
</tr>
<tr>
<td>VERSED</td>
<td>0.2 mg/kg</td>
<td>IN</td>
<td></td>
<td>5 mg</td>
<td>10 mg/2 ml</td>
</tr>
<tr>
<td></td>
<td>0.1 mg/kg</td>
<td>IM</td>
<td></td>
<td>5 mg</td>
<td>10 mg/2 ml</td>
</tr>
</tbody>
</table>

1 - Oral Glucose is NOT to be used for patients less than 1 month old.

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ALS H-25.2
### Region XI Pediatric Resuscitation Card

<table>
<thead>
<tr>
<th>AGE</th>
<th>WEIGHT IN KG</th>
<th>HEART RATE PER MINUTE</th>
<th>SYSSTOLIC BLOOD PRESSURE</th>
<th>RESPIRATORY RATE</th>
<th>BLADE SIZE</th>
<th>ETTO SIZE, uncuffed, for cuffed use 0.5 smaller</th>
<th>1st CARBONIVERSION dose 0.5J/kg</th>
<th>2nd CARBONIVERSION dose 1.0 J/kg</th>
<th>1st DEFIBRILLATION dose 2.0 J/kg</th>
<th>2nd &amp; subsequent DEFIBRILLATION dose 4.0 J/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>NB</td>
<td>3</td>
<td>100-180</td>
<td>&gt; 60</td>
<td>30-60</td>
<td>0-1</td>
<td>2.5-3</td>
<td>2 J</td>
<td>3 J</td>
<td>6 J</td>
<td>12 J</td>
</tr>
<tr>
<td>1 mo</td>
<td>4</td>
<td>100-180</td>
<td>&gt; 60</td>
<td>30-60</td>
<td>0-1</td>
<td>2.5-3</td>
<td>2 J</td>
<td>4 J</td>
<td>8 J</td>
<td>16 J</td>
</tr>
<tr>
<td>2 mo</td>
<td>5</td>
<td>100-160</td>
<td>&gt; 60</td>
<td>30-60</td>
<td>0-1</td>
<td>2.5-3</td>
<td>3 J</td>
<td>5 J</td>
<td>10 J</td>
<td>20 J</td>
</tr>
<tr>
<td>3 mo</td>
<td>6</td>
<td>100-160</td>
<td>&gt; 60</td>
<td>30-60</td>
<td>1</td>
<td>3.5-4</td>
<td>3 J</td>
<td>6 J</td>
<td>12 J</td>
<td>24 J</td>
</tr>
<tr>
<td>4 mo</td>
<td>7</td>
<td>100-160</td>
<td>&gt; 60</td>
<td>30-60</td>
<td>1</td>
<td>3.5-4</td>
<td>4 J</td>
<td>7 J</td>
<td>14 J</td>
<td>28 J</td>
</tr>
<tr>
<td>6 mo</td>
<td>8</td>
<td>100-160</td>
<td>&gt; 60</td>
<td>30-60</td>
<td>1</td>
<td>3.5-4</td>
<td>4 J</td>
<td>8 J</td>
<td>16 J</td>
<td>32 J</td>
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<tr>
<td>9 mo</td>
<td>9</td>
<td>100-160</td>
<td>&gt; 60</td>
<td>30-60</td>
<td>1</td>
<td>3.5-4</td>
<td>4 J</td>
<td>9 J</td>
<td>18 J</td>
<td>36 J</td>
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<tr>
<td>1 yr</td>
<td>10</td>
<td>90-150</td>
<td>&gt; 70</td>
<td>24-40</td>
<td>2</td>
<td>4-4.5</td>
<td>5 J</td>
<td>10 J</td>
<td>20 J</td>
<td>40 J</td>
</tr>
<tr>
<td>2 yr</td>
<td>12</td>
<td>90-150</td>
<td>&gt; 70</td>
<td>24-40</td>
<td>2</td>
<td>4-4.5</td>
<td>6 J</td>
<td>12 J</td>
<td>24 J</td>
<td>48 J</td>
</tr>
<tr>
<td>3 yr</td>
<td>14</td>
<td>80-140</td>
<td>&gt; 75</td>
<td>22-34</td>
<td>2</td>
<td>4.5-5</td>
<td>7 J</td>
<td>14 J</td>
<td>28 J</td>
<td>56 J</td>
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<tr>
<td>4 yr</td>
<td>16</td>
<td>80-140</td>
<td>&gt; 75</td>
<td>22-34</td>
<td>2</td>
<td>4.5-5</td>
<td>8 J</td>
<td>16 J</td>
<td>32 J</td>
<td>64 J</td>
</tr>
<tr>
<td>5 yr</td>
<td>18</td>
<td>70-120</td>
<td>&gt; 80</td>
<td>18-30</td>
<td>2</td>
<td>4.5-5</td>
<td>9 J</td>
<td>18 J</td>
<td>36 J</td>
<td>72 J</td>
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<tr>
<td>6 yr</td>
<td>20</td>
<td>70-120</td>
<td>&gt; 80</td>
<td>18-30</td>
<td>2</td>
<td>5-5.5</td>
<td>10 J</td>
<td>20 J</td>
<td>40 J</td>
<td>80 J</td>
</tr>
<tr>
<td>22</td>
<td>70-120</td>
<td>&gt; 80</td>
<td>18-30</td>
<td>2</td>
<td>5-5.5</td>
<td>11 J</td>
<td>22 J</td>
<td>44 J</td>
<td>88 J</td>
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<tr>
<td>24</td>
<td>70-120</td>
<td>&gt; 80</td>
<td>18-30</td>
<td>2</td>
<td>5-5.5</td>
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<td>24 J</td>
<td>48 J</td>
<td>96 J</td>
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<td>8 yr</td>
<td>26</td>
<td>70-120</td>
<td>&gt; 80</td>
<td>18-30</td>
<td>2-3</td>
<td>5.5-6.5</td>
<td>13 J</td>
<td>26 J</td>
<td>52 J</td>
<td>104 J</td>
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<tr>
<td>28</td>
<td>70-120</td>
<td>&gt; 80</td>
<td>18-30</td>
<td>2-3</td>
<td>5.5-6.5</td>
<td>14 J</td>
<td>28 J</td>
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<td>&gt; 80</td>
<td>18-30</td>
<td>2-3</td>
<td>5.5-6.5</td>
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<td>18-30</td>
<td>2-3</td>
<td>5.5-6.5</td>
<td>16 J</td>
<td>32 J</td>
<td>64 J</td>
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<td>18-30</td>
<td>2-3</td>
<td>5.5-6.5</td>
<td>17 J</td>
<td>34 J</td>
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<td>36</td>
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<td>18-30</td>
<td>2-3</td>
<td>5.5-6.5</td>
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<td>18-30</td>
<td>2-3</td>
<td>5.5-6.5</td>
<td>19 J</td>
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<td>12-16</td>
<td>3</td>
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<td>42 J</td>
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<td>12-16</td>
<td>3</td>
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<td>22 J</td>
<td>44 J</td>
<td>88 J</td>
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<td>&gt; 90</td>
<td>12-16</td>
<td>3</td>
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<td>3</td>
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<td>3</td>
<td>7.0-8</td>
<td>25 J</td>
<td>50 J</td>
<td>100 J</td>
<td>200 J</td>
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### APGAR Scoring

- **A** = Appearance (color)  
- **P** = Pulse (heart rate)  
- **G** = Grimace (reflex irritability)  
- **A** = Activity (muscle tone)  
- **R** = Respiratory Effort

- **0**, **1**, **2**, **1MIN**, **5MIN**

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>1MIN</th>
<th>5MIN</th>
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<tbody>
<tr>
<td>A</td>
<td>Blue, Pale</td>
<td>Blue Hands &amp; Feet</td>
<td>Entirely Pink</td>
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<tr>
<td>P</td>
<td>Absent</td>
<td>&lt;100/min</td>
<td>≥100/min</td>
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</tr>
<tr>
<td>G</td>
<td>No Response</td>
<td>Grimace</td>
<td>Cough or Sneezing</td>
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<tr>
<td>A</td>
<td>Some Flexion of Extremities</td>
<td>Active Motion</td>
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<td>R</td>
<td>Absent</td>
<td>Weak Cry, Hypoventilation</td>
<td>Good, Strong Cry</td>
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<tr>
<td>AGE</td>
<td>NB</td>
<td>1 mo</td>
<td>2 mo</td>
<td>3 mo</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>1 ml</td>
<td>0.6 ml</td>
<td>0.6 ml</td>
</tr>
</tbody>
</table>

**Region XI Pediatric Resuscitation Card**

**Fluid Bolus 0.9 NS**

- **20ml/kg/IV (NB 10ml/kg)**
- **1st Dose Adenosine** 6mg/2ml
- **Atropine 1mg/2ml**
- **Benadryl 50mg/ml IV**
- **Dextrose**
  - D50% 1mL/kg IV/IO for >8
  - D25% 2-4mL/kg for 1-8
  - D12.5% 4-8mL/kg for age<1

**Dextrose 10%**

- 0.5g/kg 5mL/kg IV
- 1mL/kg IM

**Fluid Concentrations**

- **Dextrose**
  - D50% 1mL/kg IV/IO for >8
  - D25% 2-4mL/kg for 1-8
  - D12.5% 4-8mL/kg for age<1
  - Concentrations may repeat x1 if needed

**Dextrose 10%**

- 0.5g/kg 5mL/kg IV

**Epinephrine**

- 0.01mg/kg IM
- 0.01mg/kg IV

**Epinephrine 1:10,000**

- 0.01mg/kg IV

**EpiNo 0.9 LIV**

- 0.01mg/kg IM
- 0.01mg/kg IV

**Fentanyl**

- 1mcg/kg IV

**Morphine**

- 0.1mg/kg IM
- 0.1mg/kg IV

**Narcan**

- 0.1mg/kg IM
- 0.1mg/kg IV

**Versed**

- 0.1mg/kg IM
- 0.1mg/kg IV

**Weight in KG**

- **20**
  - 600 ml
  - 200 ml/kg/IV (NB 10ml/kg)

**Adolescent**

- 1000 ml
  - 1.7 ml
  - 3.5 ml
  - 5 ml
  - 1 ml
  - D50%
  - 250 ml
  - 0.5 ml
  - 5 ml
  - 1 ml
  - 0.5 ml
  - 5 ml
  - 2 ml
  - 1 ml

**REGION XI**

- **Pediatric Resuscitation Card**

**Chicagos EMS**
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## REGION XI APPROVED OXYGEN DELIVERY METHODS

<table>
<thead>
<tr>
<th>Delivery Method</th>
<th>Flow Rate</th>
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<tbody>
<tr>
<td>Nasal Cannula</td>
<td>1 – 6L / min.</td>
</tr>
<tr>
<td>Non-rebreather Mask (NRB)</td>
<td>10 -15L / min.</td>
</tr>
<tr>
<td>Bag Valve Mask (BVM)</td>
<td>15L / min.</td>
</tr>
<tr>
<td>Endotracheal Intubation</td>
<td>15L / min.</td>
</tr>
<tr>
<td>King LT Supraglottic Airway</td>
<td>15L / min.</td>
</tr>
<tr>
<td>Blow-by (for children who do not tolerate a NRB)</td>
<td>10 – 15L / min.</td>
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</table>
# GLASGOW COMA SCALE (GCS)

TOTAL 3 to 15

<table>
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<th>EYES OPEN:</th>
<th>Score</th>
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<tr>
<td>Verbal</td>
<td>3</td>
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<tr>
<td>Pain</td>
<td>2</td>
</tr>
<tr>
<td>None</td>
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<table>
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<tr>
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<th>Score</th>
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<tbody>
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<td>Oriented</td>
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<tr>
<td>Confused</td>
<td>4</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>3</td>
</tr>
<tr>
<td>Incomprehensible</td>
<td>2</td>
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<tr>
<td>None</td>
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<table>
<thead>
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<th>BEST MOTOR:</th>
<th>Score</th>
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<tbody>
<tr>
<td>Obeys</td>
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<td>Localizes</td>
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<td>Abnormal Flexion</td>
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</tr>
<tr>
<td>Abnormal Extension</td>
<td>2</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
</tr>
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</table>
CINCINNATI STROKE SCALE

1) **Facial droop**: Have patient show teeth or smile  
   **Abnormal**: One side does not move as the other

2) **Arm drift**: Have patient close eyes and hold arms out for 10 seconds with palms up  
   **Abnormal**: One arm does not move or drifts down

3) **Abnormal speech**: Have patient say “You can’t teach an old dog new tricks”  
   **Abnormal**: Patient slurs words, uses wrong words, or is unable to speak

**Relative Criteria for Transport to a Primary Stroke Center (PSC)**

Patients with a negative or unattainable CSS may be transported to a PSC if acute stroke $\leq 6$ hours in duration is suspected by the Base Station based on any of the following:
- Sudden and persistent alteration of consciousness
- Sudden onset severe headache (especially in association with vomiting +/- SBP $>200$)
- Severe and sudden loss of balance
ADVANCED AIRWAY MANAGEMENT

I. PEDIATRIC ADVANCED AIRWAY MANAGEMENT

Pediatric patients ≤ 8 years of age should have their airway preferentially managed via BVM and oral or nasal airway.

II. ADULT ORAL ENDOTRACHEAL INTUBATION

INDICATIONS

Considered for patients with:
- Apnea
- Inadequate respiratory effort, or
- An inability to protect the patient airway (e.g., Glasgow Coma Scale less than or equal to 8)

CONTRAINDICATIONS

Inability to visualize anatomical landmarks.

EQUIPMENT

1. Oral airway
2. Bag-valve-mask
3. O₂
4. Suction
5. Stethoscope
6. Appropriately sized ET tube and stylet
7. Appropriately sized Laryngoscope blade and handle
8. 10cc syringe
9. ETT holder
10. Pulse oximeter and capnography

PROCEDURE

1. Apply personal protective equipment.
2. Position patient to open airway, insert OP and maintain in-line stabilization for all suspected trauma patients.
3. Create seal with mask on patient's face and assist ventilation with bag-valve-mask device.
4. Assemble all equipment and test for function. Attach pulse oximeter.
5. Remove oral airway, insert laryngoscope blade to visualize vocal cords.
6. Insert the ET tube until the cuff passes through the cords and remove the stylet if used.
7. Immediately connect the EtCO2 detector to the ET tube and confirm placement with EtCO2 waveform.
ADVANCED AIRWAY MGMT. (cont.)

8. If EtCO2 waveform indicates improper ET tube placement, immediately remove the ET tube and ventilate the patient using the BVM. Consider securing an airway with the King/Supraglottic Airway.

9. If ET tube placement cannot be visualized with direct laryngoscopy, return to step 3. May repeat for a total of two (2) attempts, then proceed to Part II -- King/Supraglottic Airway Intubation.

10. All patients, once intubated, should have both lungs auscultated for adequate ventilation. Next auscultate the epigastric area for absence of air movement, then secure the ET tube and insert oral airway. **Attach capnography and monitor continuously.**

11. If inadequate lung sounds are auscultated on the **LEFT** side, the tube should be pulled back in 1 cm increments until equal breath sounds are heard.

12. Lung sounds should be continually re-assessed throughout patient contact and whenever patient is moved or position changed. Continually reassess pulse oximeter and capnography.

13. If at any time:
   - the bag becomes difficult to compress,
   - there is evidence of hypoperfusion (changes in vital signs, mental status or decreased capillary refill),
   - change in tube position does not demonstrate clinical improvement,
   Tube placement verification should be reassessed by direct visualization. Reassess pulse oximeter and capnography. If the ET tube is inappropriately placed, return to step 3.

14. If the ET tube is appropriately placed, consider chest decompression for tension pneumothorax.

15. Continue to assist ventilations as indicated.

16. Documentation should include all procedures associated with intubation process that were attempted and completed.

II. **KING LTS-D AIRWAY (SUPRAGLOTTIC AIRWAY) INTUBATION**

**INDICATIONS**
- Airway management in a non-breathing person without a gag reflex
- Patient is over 4 feet in height.

**CONTRAINDICATIONS**
- Patients under 4 feet in height.
- Intact gag reflex.
- Patients with known esophageal disease
- Patients who have ingested caustic substances

ALS I-4.2
**EQUIPMENT**

1. King LTS-D Airway
2. 14 Fr soft suction catheter
3. Lubricant
4. 60 cc syringe

**PROCEDURE**

1. Pre-oxygenate the patient.

2. Choose the correct size King LTS-D airway
   
   • **Size 3** fits 4-5 feet in height Yellow connector.
   • **Size 4** fits 5-6 feet in height Red connector.
   • **Size 5** fits 6+ feet in height Purple connector.

3. Inspect the King LTS-D for visible damage prior to insertion.

4. Test cuff to ensure there are no leaks.

5. Apply a water-based lubricant to the beveled distal tip and posterior aspect of the tube. Avoid getting lubricant near the ventilatory openings.

6. Position patient’s head. The ideal position for the King LTS-D insertion is “sniffing position”. The angle of the King LTS-D does not allow for insertion at a neutral angle.

7. Hold the King LTS-D at the connector with the dominant hand. With the non-dominant hand, hold the mouth open and apply chin lift, unless contraindicated by C-spine precautions or patient position. Using a lateral approach, introduce tip into corner of mouth.

8. Advance the tip behind the base of the tongue while rotating tube back to midline so that the blue orientation line faces the chin of the patient.

9. Without exerting excessive force, advance the King LTS-D until base of connector is aligned with teeth or gums.

10. Inflated the cuffs with the minimum volume necessary to seal the airway. Inflation volumes are located the King LTS-D airway. Typical inflation volumes are as follows:

   • Size 3: 45-60 cc
   • Size 4: 60-80 cc
   • Size 5: 70-90 cc

11. Gently ventilate the patient using BVM. If initial ventilations meet resistance perform the following:

   • Slowly pull back on King LTS-D airway while gently ventilating.
   • When ventilations suddenly become easy and free flowing with corresponding chest wall rise maintain that level of insertion.

12. Confirm placement to ensure adequate ventilations by auscultation of lung sounds, observing adequate chest rise, and verification of end tidal CO2 waveform.

ALS I-4.3
13. If necessary, add additional volume to cuff to maximize seal of the airway (within cuff size limits).

14. Secure King LTS-D airway to patient utilizing tape or appropriate commercial device.

15. Lubricate a 14 Fr. suction catheter prior to inserting into the King LTS-D’s gastric access lumen.

16. Document the size of King LTS-D airway used and the depth of insertion at teeth or lips.

*Note: The King LT airway does not protect the airway from aspiration like ET intubation does.*
CARDIAC ARREST MANAGEMENT  
Incident Command for Cardiac Arrest (ICCA)

INDICATIONS

- Non-traumatic cardiac arrest

CODE TASKS

- Resuscitation must begin and continue where patient is encountered
- Provide high quality, uninterrupted chest compressions
- Provide early defibrillation
- Provide controlled ventilatory management during the resuscitation
- IV/IO access and ALS drug delivery
- End Tidal CO2 monitoring

EQUIPMENT

BLS:

1. Automated External Defibrillator
2. Bag Valve Mask
3. Supraglottic Airway (King Airway)
4. Oxygen

ALS:

1. Lifepak 1000 monitor/defibrillator/pads (or private provider equivalent)
2. Lifepak 15 monitor/defibrillator/ETCO2/pads (or private provider equivalent)
3. Bag Valve Mask
4. Advanced airway equipment (supraglottic airway or endotracheal tube)
5. IV/IO equipment
6. ACLS drugs

PROCEDURE

1. Begin and continue resuscitation where the patient is encountered. **DO NOT MOVE THE PATIENT.** Call for an assist company (or as per private provider protocol). Patients should only be moved for scene safety concerns, not for provider convenience. Any delay in initiation of resuscitation will decrease the chance of survival.

2. Initiate high quality uninterrupted chest compressions. Harder-deeper-faster with rate 100-120 per minute (use metronome when available). Use alternate providers to avoid fatigue. Chest compressions should only be interrupted to analyze rhythm and deliver defibrillation (< 10 seconds).

3. Attach cardiac monitor and assess rhythm. Defibrillate if ventricular fibrillation or pulseless ventricular tachycardia (or if AED advises). May initiate care with Lifepak 1000, however, upgrade to Lifepak 15 as soon as manpower allows.
4. Basic airway management with bag valve mask ventilation. Apply End Tidal CO2 to BVM. Monitor ETCO2 to assess quality of CPR. Goal ETCO2: > 10. If < 10 improve quality of chest compressions or switch compressors. Deliver 1 breath every 6 seconds (10 breaths per minute).

5. Continue 2 minute cycles of CPR and defibrillation until assist company arrives. Do not attempt IV/IO access or advanced airway management until at least three providers are on scene.

6. Code commander delegates tasks when assist company arrives.

7. IV/IO access and administration of drugs as per ALS SMOs B-3 and B-4. The proximal tibia is the preferred site for IO access during cardiac arrest resuscitation.

8. Place supraglottic airway (preferred advanced airway for patients in cardiac arrest). Endotracheal intubation may be performed as backup airway if unable to ventilate/oxygenate with supraglottic airway. Do not interrupt compressions during placement of an advanced airway. Deliver 1 breath every 6 seconds (10 breaths per minute).

9. Apply End Tidal CO2. Monitor waveform and number to assess:
   a. Correct advanced airway position and ventilation
   b. Quality of CPR
   c. Return of spontaneous circulation (ROSC)

10. Contact online medical control from the scene (before moving the patient) to discuss the following options:
    a. Continue field resuscitation for a defined period/task achievement and re-contact medical control
    b. Transport patient with return of spontaneous circulation (ROSC) to closest STEMI center (see Adult Post Cardiac Arrest Care, I-6.1)
    c. Transport patient with ongoing resuscitation to closest STEMI center
    d. Terminate resuscitative efforts

    ALL PATIENTS WITH ROSC OR ONGOING RESUSCITATION MUST BE TRANSPORTED TO A STEMI CENTER.

**MANDATORY DOCUMENTATION**

1. “Cardiac Arrest” should be listed for paramedic impression for all non-traumatic cardiac arrest victims. Do not use “rule out” for any cardiac arrest impression.

2. All information from the first company on scene should be relayed to the transporting paramedics and included in both patient care records.

3. All mandatory cardiac arrest questions in the ePCR should be completed before record is closed.

4. End-Tidal CO2 number and waveform should be documented in the patient care record.

5. Lifepak 15 “Report>All” should be uploaded to CodeSTAT.
ICCA ROLES AND RESPONSIBILITIES

Cardiac arrest is a shared ALS and BLS response. Successful resuscitation requires a coordinated effort. Upon arrival, resuscitation roles should be clearly delegated by the highest ranking medical member on scene, so that primary code tasks are carried out quickly and efficiently.

1. **Code Commander**
   - Highest ranking medical member on scene
   - Oversees all operations
   - Responsible for timing of CPR cycles and defibrillation
   - Requests additional manpower/resources
   - Completes and/or delegates code tasks

2. **Compressor-1**
   - Performs high quality uninterrupted chest compressions
   - Assume compressor 2’s role when relieved

3. **Compressor-2**
   - Monitor’s the effectiveness of compressor 1’s compressions (monitors ETCO2 for compression quality feedback)
   - Assists with seal during bag valve mask ventilation
   - Relieves compressor 1 after 2 minutes or when compression quality decreases

4. **Procedures**
   - Apply cardiac monitor/analyze rhythm
   - Defibrillate
   - Gain IV/IO access
   - Administer medications as per ALS SMOs B-3 and B-4
   - Basic and advanced airway management
   - Apply and monitor End Tidal CO2

5. **Logistics**
   - Oversee distribution of equipment
   - Set up IV/IO equipment
   - Assemble medications/assist with drug delivery
   - Facilitates communication with online medical control
   - Prepares for transport
   - Relief for other tasks

6. **Liaison/Safety**
   - Control the scene and provide for the safety of the resuscitation team
   - Data collection/documentation: Patient demographics, medications, medical history, events
   - Communicates and assists with family/bystanders

ALS I-5.3
ADULT POST-CARDIAC ARREST CARE

PROCEDURE:

1. Confirm Return of Spontaneous Circulation (ROSC)
   a. Identify palpable pulse
   b. Document auscultated blood pressure
   c. Perform 12 lead ECG

2. Assess oxygenation and ventilation
   a. Maintain oxygen saturation ≥ 94%
   b. Assist spontaneous respirations with BVM as necessary
   c. If no spontaneous respirations, place King Airway or Endotracheal Tube and attach continuous ETCO2 capnography
   d. Avoid hyperventilation
   e. Titrate ventilation to target ETCO2 of 35-40 mmHg

3. Assess circulation
   a. If SBP is less than 90 mmHg, administer one 300 ml bolus of NS and repeat as indicated to maintain SBP ≥ 90 mmHg

4. Assess mental status
   a. If patient is comatose with GCS ≤ 8, begin Therapeutic Hypothermia (see indications and contraindications below)
   b. Check blood glucose, treat hypoglycemia accordingly

5. Contact Medical Control
   a. Minimize movement of patient during post-arrest phase
   b. In the radio report, notify Medical Control if:
      i. Patient has ST Elevation Myocardial Infarction (STEMI) on 12 lead
      ii. If therapeutic hypothermia has been started

6. Transmit 12 lead ECG and transport patient to STEMI center

THERAPEUTIC HYPOTHERMIA

INDICATIONS:

1. Adult cardiac arrest with ROSC
2. Sustained ROSC for a minimum of 5 minutes after arrest
3. Comatose with GCS ≤ 8 (lack of meaningful response to verbal commands)

CONTRAINDICATIONS:

1. Traumatic cardiac arrest
2. Pregnancy
3. Do Not Resuscitate (DNR) status
4. Patients with known bleeding problem or active bleeding
5. Patients with significant known liver disease

ALS I-6.1
IMPLEMENTATION:

Apply ice packs to each of the following locations (6 total):
   a. 1 to each carotid artery on neck
   b. 1 to each axilla
   c. 1 to each femoral artery on groin

Snap and then apply ice packs as shown. One over each carotid artery (neck), one in each axilla, and one over each femoral artery (groin)
NEEDLE CRICOTHYROTOMY

INDICATIONS

- Respiratory obstruction
- Anaphylaxis
- Traumatic airway
- Suspected croup
- Epiglottis with airway obstruction
- Failed endotracheal intubation “with” inability/contraindication to use supraglottic airway

CONTRAINDICATIONS

To be done with caution in patients:
- less than 8 years old or
- suspected barotrauma

EQUIPMENT

1. 10 or 14 gauge angiocath
2. 10 ml syringe
3. 3.0 or 3.5mm ET tube adapter

PROCEDURE

1. Hyperextend neck unless suspected neck trauma.

2. Identify thyroid cartilage and cricoid cartilage. Locate cricothyroid membrane located between these two landmarks.

3. Use angiocath attached to a 10cc syringe; insert catheter through the cricothyroid membrane at a 90 degree angle until a “popping” sensation is felt.

4. Aspirate air to verify placement.

5. Remove syringe; advance catheter tilting it at a 30 degree angle, aiming towards the feet. Remove the needle while advancing the catheter.

6. Once in place, reconnect the syringe and re-verify placement (Should aspirate air easily.)

7. Connect adapter from 3.0 or 3.5 ET tube to angiocath.

8. Attach bag valve mask and initiate ventilation; you will have difficulty ventilating due to narrowed airway.

9. Auscultate breath sounds.

10. May repeat for total of 2 attempts. Transport with catheter in place.
NEEDLE DECOMPRESSION

INDICATIONS

This procedure is to be used for patients with:

- Evidence of thoracic trauma AND any of the following:
  
  1. Traumatic arrest
  2. Evidence of tension pneumothorax, which are:
     
     a. Systolic blood pressure <90 mmHg AND
     
     b. Respiratory distress or respiratory failure
  
  3. Direction by Online Medical Control

- Suspected tension pneumothorax in non-traumatic cardiac arrest (e.g. PEA arrest with subcutaneous emphysema)

CONTRAINDICATIONS

- Isolated, decreased breath sounds without evidence of hypotension and respiratory distress

EQUIPMENT

1. 14 gauge 3.5” angiocatheter
2. Alcohol prep pad

PROCEDURE

1. Identify second intercostal space in the midclavicular line on the same side of the chest as the traumatic injury or subcutaneous emphysema.

2. Prepare the skin with alcohol prep pad.

3. Insert the needle at a 90 degree angle into the skin just over the third rib into the second intercostal space in the midclavicular line.

4. Aspirate as necessary to relieve respiratory distress.

5. Leave catheter in place; remove syringe and needle from catheter for transport.

5. If no improvement in blood pressure or respiratory status, check for free flow of air through the catheter. If obstructed, place second catheter next to the first. Do not delay transport for repeated attempts at decompression.

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Reviewed: 1/92; 11/95; 3/09; 5/11; 10/15
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IDPH Approval: 8/96; 11/16/92; 2/20/96; 7/9/09; 2/25/16
Implementation: 8/96; 3/1/93; 5/1/96; 1/1/10; 3/1/16

ALS I-8
AUTOMATIC VENTILATORS

I. UNIVENT

INDICATIONS

- Intubated patients who need continuous ventilation

CONTRAINDICATIONS

- Chest trauma
- Children less than 2 years old
- Known pneumothorax

EQUIPMENT

Model specific

If adequacy of ventilation with ventilator is in question remove ventilator and bag patient.
CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

Continuous Positive Airway Pressure (CPAP) may be used as an adjunctive therapy for the treatment of patients with suspected Acute Pulmonary Edema, Chronic Obstructive Pulmonary Disease (COPD) or Asthma who present in MODERATE to SEVERE respiratory distress:

**INDICATIONS**

- Pulse Ox less than 92%
- Respiratory rate greater than 25
- Accessory muscle use

Suspect Acute Pulmonary Edema, COPD or Asthma as the cause of respiratory distress in patients with:

- History of CHF/MI, COPD or Asthma
- Orthopnea
- On medications for CHF (furosemide, digoxin, ace inhibitor)
- Pulmonary rales, crackles
- Wheezing
- Lower extremity edema
- Jugular Venous Distension
- STEMI confirmed by 12 lead ECG

**CONTRAINDICATIONS**

- Age less than < 10 years
- Inability to protect airway, significantly altered mental status.
- Hemodynamic instability
  - Systolic blood pressure less than 100 mmHg
  - Significant arrhythmia (i.e. ventricular tachycardia, 3rd degree heart block).
- Inability to cooperate with fitting and wearing of mask
- Rapid deterioration once mask is placed
- Known or suspected pneumothorax
- Recent gastric, laryngeal, esophageal surgery
- Significant nausea and vomiting.

**EQUIPMENT**

1. Boussignac CPAP system or the Flow Safe II EZ CPAP system (private providers may use ventilator based system)

2. Appropriate sized mask
   - Boussignac – Size 5 medium (adult)
   - Flow Safe II EZ – Size large

3. Oxygen tank with flow regulator able to generate 25 liters/min flow rate.

4. D-tank must have a minimum of 2,000 psi.
BOUSSIGNAC CPAP SYSTEM

PROCEDURE

1. Initiate RMC.

2. Explain procedure to patient.
   • i.e. “I am going to put this mask on your face to help you breath. Try to relax and breathe normally.”

3. Prepare CPAP system equipment
   • Insert white end of CPAP system into face mask
   • Connect funnel end of green O2 tubing to oxygen source.
   • Turn on O2 and dial flow meter to desired setting (begin with 15 liters per minute (LPM) equaling CPAP of 5.0)

4. Prepare patient
   • Place in fowler’s or semi-fowler’s position
   • One crew member gently place mask on patient’s face obtaining a proper seal without leaks.
   • Second crew member secure mask to patients face with head strap.

5. Titrate CPAP
   • Increase flow meter to 25 LPM equaling CPAP of 10 (see table 1 and 2)
   • Reassess patient for mask seal and ability to cooperate/tolerate mask
   • If patient is unable to tolerate, decrease flow rate to 20 LPM and reassess
   • Continue close monitoring of patient with goal of:
     i. Decreased heart rate
     ii. Decreased respiratory rate/effort
     iii. Improved oxygen saturation

6. Indications for discontinuation of CPAP (Place on 100% oxygen NRB mask)
   • Rapid deterioration (proceed to Advanced Airway Management procedure as indicated)
   • Inability to cooperate with wearing and fitting of mask
   • Hypotension (SBP less than 100 mmHg)
   • Worsening hypoxia (decrease in O2 saturations %)
   • Vomiting or inability to handle secretions
   • Suspected pneumothorax
   • Base station discretion

<table>
<thead>
<tr>
<th>Flow (LPM)</th>
<th>CPAP (cm H20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>2.5-3.0</td>
</tr>
<tr>
<td>15</td>
<td>4.5-5.0</td>
</tr>
<tr>
<td>20</td>
<td>7.0-8.0</td>
</tr>
<tr>
<td>25</td>
<td>8.5-10</td>
</tr>
<tr>
<td>&gt;25</td>
<td>&gt;10</td>
</tr>
</tbody>
</table>

TABLE 1: Liters of O2 Flow = CPAP cm H20

ALS I-10.2
TABLE 2: Minutes of CPAP use based on Oxygen Tank Size

<table>
<thead>
<tr>
<th>Flow (LPM)</th>
<th>D Tank (minutes)</th>
<th>K Tank (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>70</td>
<td>703</td>
</tr>
<tr>
<td>6</td>
<td>58</td>
<td>598</td>
</tr>
<tr>
<td>8</td>
<td>44</td>
<td>498</td>
</tr>
<tr>
<td>10</td>
<td>35</td>
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</tr>
<tr>
<td>12</td>
<td>29</td>
<td>299</td>
</tr>
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<td>15</td>
<td>23</td>
<td>199</td>
</tr>
<tr>
<td>20</td>
<td>16</td>
<td>175</td>
</tr>
<tr>
<td>25</td>
<td>14</td>
<td>140</td>
</tr>
</tbody>
</table>
FLOW-SAFE II EZ CPAP System

PROCEDURE

1. Initiate RMC.

2. Explain procedure to patient.
   - eg. “I am going to put this mask on your face to help you breathe. Try to relax and breathe normally.”

3. Prepare CPAP system equipment
   - Connect oxygen tubing to flow meter or regulator.
   - Turn on O2 and dial flow meter to desired setting: begin with 8-9 liters per minute (LPM) equaling CPAP of 5.0
   - Adjust oxygen flow as indicated on yellow sticker attached to oxygen tubing.
   *Manometer will not register until placed on patient*

4. Prepare Patient
   - Place in fowler’s or semi-fowler’s position
   - One crew member gently place mask on patient’s face obtaining a proper seal without leaks. Place mask on patient’s face and adjust with Velcro strap on each of 4 points.
   - Quick release clips allow fast access to remove mask.
   - Spring action forehead pads allow for adjustment of mask on bridge of nose.
   - Second crew member secure mask to patients face with head strap.

5. Titrate CPAP
   - Increase flow meter to 13-14 LPM equaling CPAP of 10.0 (see table below)
   - Reassess patient for mask seal and ability to cooperate/tolerate mask
   - If patient is unable to tolerate, decrease flow rate to 10-12 LPM and reassess
   - Continue close monitoring of patient with goal of:
     - Decreased heart rate
     - Decreased respiratory rate/effort
     - Improved oxygen saturation

<table>
<thead>
<tr>
<th>CPAP Pressure (cm H2O)</th>
<th>Flow (LPM) Nebulizer Off</th>
<th>Flow (LPM) Nebulizer On</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>8 - 9</td>
<td>15 – 16</td>
</tr>
<tr>
<td>7.5</td>
<td>10 - 12</td>
<td>19 – 20</td>
</tr>
<tr>
<td>10.0</td>
<td>13 - 14</td>
<td>24 – 25</td>
</tr>
<tr>
<td>13.0 (Max)</td>
<td>FLUSH</td>
<td>28 - 30</td>
</tr>
</tbody>
</table>

**TABLE 1:** CONNECT TO FLOW SOURCE ONLY

**CAUTION:** CPAP pressure will decrease when nebulizer is activated and increase when nebulizer is deactivated. Verify CPAP pressure with manometer and adjust flow meter as needed.

ALS I-10.4
FLOW-SAFE II EZ CPAP WITH NEBULIZER

**Only one oxygen source is necessary since the nebulizer portion is built into Flow-Safe II EZ CPAP System**

6. Place medication in medication bowl.

7. Turn nebulizer switch to green (on). (see picture)

8. Adjust oxygen flow to maintain desired pressure.
   - Turning the switch to green will reduce pressure requiring an increase in oxygen flow to maintain original pressure.
   - For CPAP Pressure of 5.0, increase flow to 15-16 LPM
   - For CPAP Pressure of 10.0, increase flow to 24-25 LPM

9. Indications for discontinuation of CPAP (Place on 100% oxygen NRB mask)
   - Rapid deterioration (proceed to Advanced Airway Management procedure as indicated)
   - Inability to cooperate with wearing and fitting of mask
   - Hypotension (SBP less than 100 mmHg)
   - Worsening hypoxia (decrease in O2 saturations %)
   - Vomiting or inability to handle secretions
   - Suspected pneumothorax
   - Base station discretion
INTRA-NASAL DRUG ADMINISTRATION
Mucosal Atomization Device (MAD)

INDICATIONS
- Opiate Overdose – Narcan (Adults & Pediatrics)
- Hypoglycemia without IV access – Glucagon (Adults only)
- Seizures – Versed (Adults & Pediatrics)

CONTRAINDICATIONS
- Nasal trauma

EQUIPMENT
1. Mucosal Atomizer Device (MAD)
2. Syringe

PROCEDURE
1. Draw up dose of medication into syringe
2. Expel air from syringe
3. Remove needle and attach MAD to syringe
4. Insert tip of MAD into nostril.
5. Rapidly administer medication (1ml max per nostril; recommend giving ½ the volume in each nostril)
6. Assess for response; if none, consider alternative route for drug administration (e.g. IM)
DEFIBRILLATION/CARDIOVERSION

**INDICATIONS**

- See appropriate SMO

**CONTRAINDICATIONS**

- Potential injury to rescuer

**EQUIPMENT**

1. Defibrillation pads
2. Monitor/defibrillator
LifePack 1000 AUTOMATED EXTERNAL DEFIBRILLATOR (3 LEAD)  
(CFD PARAMEDICS ONLY)

**INDICATIONS**

- AED 1000 is to be brought to patients’ side for **all EMS responses** by CFD ALS ambulances.

**CONTRAINDICATIONS**

- None

**EQUIPMENT**

- LifePack AED 1000 with case
- 3 Lead cable
- 2 sets of defibrillation pads
- Electrodes (adult and pediatric)

**PROCEDURE**

1. **Initiation of Patient Care policy B-2.**
2. For known cardiac or respiratory calls, the manual monitor/defibrillator will be carried into patient’s side.
3. The "3 Lead cable", with electrodes will be applied when indicated i.e. based on patient’s history and/or chief complaint.
4. The defibrillation pads will be applied to the patient when indicated for defibrillation.
5. At anytime the LifePack 1000 (3-lead AED) is used, either for monitoring or for treatment, the patient will be immediately transferred to the cardiac monitor/defibrillator, once the patient has been transferred into the ambulance.

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Revised: 9/18  
MDC Approval: 6/16/11; 11/8/18  
IDPH Approval: 9/29/11; 12/18/18  
Implementation: 4/1/12; 1/18/19  
ALS I-13
TRANSCUTANEOUS PACING

INDICATIONS

Transcutaneous pacing should be considered in symptomatic patients with:
- Bradycardia,
- 2nd degree AV block
- 3rd degree AV block

CONTRAINDICATIONS

- Asymptomatic bradycardia

EQUIPMENT

1. Defibrillation pads
2. Cardiac monitor

PROCEDURE

1. RMC
2. Assess for potential causes
3. Assemble equipment
4. Have resuscitation capabilities ready
5. Explain the procedure to the patient and/or family
6. Consider analgesia:
   - Morphine Sulfate 0.1 mg/kg IV
     - ≤ 65 years of age – max dose 10 mg
     - > 65 years of age – max dose 5 mg
   - OR
   - Fentanyl 1 mcg/kg IV
     - ≤ 65 years of age – max dose 100 mcg
     - > 65 years of age – max dose 50 mcg
7. Apply defibrillation pads to clean dry skin (Clip excessive chest hair)
8. Connect pacing cable to device
9. Select current, starting at 70 mA (Range 50-100 mA)
10. Select pacing rate, starting at 80 bpm
11. Activate pacer; adjust current until electrical capture (waveform is seen) and mechanical capture (palpable femoral pulse)
12. Adjust rate to maintain perfusion
13. Adjust slowly in conscious patient, more quickly in unconscious patient. If cardiac arrest occurs, discontinue pacing and begin ICCA.
14. Continually reassess

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Implementation: 5/1/96; 1/1/10; 4/1/12; 2/1/13; 1/18/19

ALS I-14
12- LEAD ELECTROCARDIOGRAM (ECG) PROCEDURE

INDICATIONS

- All patients with suspected Acute Coronary Syndrome (ACS) should have an ECG performed in the prehospital setting
- At a minimum, patients with any of the following complaints, signs or symptoms should have an ECG performed:
  1. Chest pain
  2. Symptomatic heart failure
  3. Pulmonary edema
  4. Shortness of breath
  5. Syncope or presyncope
  6. Return of spontaneous circulation after cardiac arrest
  7. Tachycardia (>120 bpm) or bradycardia (<50 bpm)
  8. Any of the following atypical symptoms of ACS in patients over age 40 (atypical symptoms of ACS are especially common in women, diabetics and the elderly):
     - Generalized weakness
     - Epigastric pain/nausea/vomiting
     - Diaphoresis
     - Shoulder/arm/jaw pain
     - Atraumatic hypotension

EQUIPMENT

- Manual cardiac monitor/defibrillator with 12 lead ECG capability

PROCEDURE

1. Initiation of Patient Care Policy, B-3
2. Perform patient assessment and identify patients requiring an ECG based on above criteria
3. Perform 12 lead ECG
4. Transmit to receiving facility
5. Contact online medical control and transport as appropriate
6. Attach ECG to the electronic medical record
7. Repeat ECG after:
   - Any change in patient status
   - Any change in cardiac rhythm
   - Administration of any electrical or medical therapies
8. For patients with very high suspicion for Acute Coronary Syndrome and an initial ECG that does not show STEMI, leave ECG cables in place for continuous ST segment monitoring/repeat ECG.

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MDC Approval: 11/8/18
IDPH Approval: 12/18/18
Implementation: 1/18/19

ALS I-15
INTRAVENTOUS THERAPY

I. INTRAVENTOUS ACCESS

INDICATIONS

• See Initiation of Patient Care Policy

CONTRAINDICATIONS

• Extremity with AV fistula (unless patient is in extremis)
• Extremity on the same side of previous mastectomy
• Avoid burn site

EQUIPMENT

1. Tourniquet
2. IV catheter
3. Alcohol wipes/skin prep
4. Tape
5. Dressing material

II. SALINE LOCK

INDICATIONS

Saline locks are to be used in situations in which:
• IV access is only precautionary
• No active fluid or medication treatment is expected during transport

CONTRAINDICATIONS

• Cardiac arrest patients
• Patients who appear unstable
  o Imminent cardiovascular collapse
  o Severe respiratory distress
  o Significant arrhythmias
• Trauma
• Any patient requiring
  o Medication drip infusions
  o IV Boluses medication, eg. D50, etc.
• Fluid resuscitation
  o Dehydration
  o Hypotension

EQUIPMENT

1. Luer lock connector
2. Saline for flush
3. Syringe with straight needle
4. Tape
5. Alcohol wipes

ALS I-16.1
PROCEDURE FOR CONVERSION TO IV FLUID INFUSION

1. Prepare IV tubing and bag as per routine
2. Remove rubber port
3. Insert distal end of primed IV tubing connected to saline lock or angiocath
4. Secure IV line with tape
5. Set appropriate drip rate

III. MEDICATION ADMINISTRATION

INDICATIONS

- Direct ECP/ECRN order
- SMO

CONTRAINDICATION

- Known allergy

EQUIPMENT

1. Syringe
2. Needleless set-up/needle
3. Medication
4. Alcohol Wipe
MANUAL PEDIATRIC INTRAOSSEOUS INFUSIONS

INDICATIONS

If a child presents meeting all of the following criteria, paramedics should immediately gain vascular access through the intraosseous route:

AGE: 6 years or less
PRESENTATION: Shock, arrest, impending arrest
LOC: Unconscious, non-responsive to verbal stimuli
UNSUCCESSFUL IV's: Two quick IV attempts have been unsuccessful or no peripheral veins are readily apparent or obtainable. In full cardiac arrest - may attempt intraosseous as first procedure.

CONTRAINDICATIONS

1. If history is known, bone disorders such as osteogenesis imperfecta and osteopetrosis (excessive calcification causing spontaneous fractures)
2. Cellulitis at the site
3. Recently fractured bones due to extravasation of blood/fluid into the subcutaneous tissue
4. If two attempts are unsuccessful

EQUIPMENT

1. Bone marrow aspiration needle (size 15-18 ga.)
2. 3cc non-luer lock or luer lock and adapter syringe
3. Normal saline IV solution; regular IV tubing
4. Tape
5. Sterile gloves
6. Towel roll

PROCEDURE

1. Support the child's leg on towel roll. Externally rotate leg slightly.

2. Select insertion site:
   a. Preferred site: Anteriomedial tibia, two fingerbreadths below the tibial tuberosity.
   b. Second choice: Distal one-third of the femur, two fingerbreadths above the patella (Note: This site is more difficult to penetrate)

3. Find the landmarks by palpating approximately two fingerbreadths below the tibial tuberosity. Move fingers inward to medial plane of bone.

4. Using aseptic technique, put on sterile gloves and clean skin using a circular motion starting at the center and moving outward from the insertion site.
INTRAOSSEOUS INFUSIONS (cont.)

5. Place the bone marrow needle at a 90° angle away from the epiphyseal plate. (POINT TIP OF NEEDLE TOWARD THE FOOT).

6. Insert the needle with firm downward pressure using a rotary motion to penetrate the skin and subcutaneous tissues and then the periosteum and bone cortex.

7. A "pop" or sudden loss of resistance will herald entrance into the medullary cavity. A child of less than 4 years old will only require a penetration depth of 2-4mm.

8. Remove stylet from needle and aspirate with 3 ml syringe. A flashback or aspiration of bone marrow (looks like dark blood) will confirm proper placement. Do not aspirate more than 1cc of bone marrow.

Occasionally, no bone marrow can be aspirated because:

a. The needle may not be in the medullary cavity because it went completely through the bone;
b. The point of the needle is in the cortex of the bone;
c. The distal opening may be lying against a small piece of bone. Try turning the needle in a semicircular motion to clear the obstruction.

9. Immediately flush needle with Normal Saline once proper placement is confirmed. Attach IV tubing and begin IV infusion. IV fluid should flow freely without significant subcutaneous infiltration. Fluid challenges in children should be calculated at 20 ml NS/Kg of body weight.

10. To secure needle: the needle should remain stabilized with little assistance. The flange of the needle depth guard should be adjusted by screwing it down until it is flush with the skin. Tape needle in place.

11. Restrain child as necessary to protect site and reassess site for displacement or infiltration.
EZ – IO PEDIATRIC INTRAOSSEOUS INFUSION

INDICATIONS:

- Pediatric patients who are in shock, arrest, impeding arrest, are unstable, unconscious or when immediate vascular access is needed

APPROVED IO SITES:

- Proximal medial tibia
- Distal tibia (medial malleolus)

CONTRAINDICATIONS

- Infection at the site selected for insertion (choose alternate site)
- Fracture of the bone selected for IO infusion (choose alternate site)
- Previous significant orthopedic procedures (IO within 24 hours, prosthesis- choose alternate site)
- If known history of osteogenesis imperfecta and osteoporosis
- If two attempts are unsuccessful with the EZ IO

EQUIPMENT:

1. EZ-IO Driver 5. Tape 9. Towel Roll/Blanket
2. EZ-IO needle set 6. Gloves
3. 10 ml syringe 7. Dressing
4. Normal Saline IV solution, regular IV tubing 8. Skin prep

PROCEDURE:

1. Support the leg on a towel roll/blanket. Externally rotate leg.
2. Select appropriate insertion site.
3. Prepare insertion site using aseptic technique.
4. Identify Landmarks:
   i. **Proximal Tibia:** Palpate tibial tuberosity, move (2) fingers below and medial to it.
   ii. **Distal Tibia:** Palpate medial malleolus move fingers two (2) finger width above it *(inside ankle bone).*
5. Prepare the EZ IO driver and appropriate needle set.
6. Stabilize site and insert appropriate needle set.
7. Drill until loss of resistance is felt.
8. Remove EZ-IO driver from needle set while stabilizing catheter hub.
9. Remove stylet from catheter.
10. Confirm placement by attempting to aspirate bone marrow or blood.
11. Flush with 10 ml of normal saline.
12. Connect primed tubing and begin utilizing pressure if IO flushes easily.
13. Dress site, secure tubing.
14. Monitor EZ-IO site for swelling.
EZ - IO ADULT INTRAOSSEOUS INFUSION

INDICATIONS:

- Intravenous access is indicated
- Two (2) unsuccessful peripheral intravenous attempts
- Patient is unresponsive to verbal stimuli/unconscious AND has one of the following:
  1. Cardiac arrest
  2. Impending arrest
  3. Shock

APPROVED I.O. SITES:

1. Proximal medial tibia
2. Distal tibia (medial malleolus)
3. Proximal Humerus

CONTRAINDICATIONS

- Infection at the site selected for insertion (choose alternate site)
- Fracture of the bone selected for IO infusion (choose alternate site)
- Excessive tissue preventing identification of landmarks (choose alternate site)
- Previous significant orthopedic procedures. (IO within 24 hours, prosthesis- choose alternate site.

EQUIPMENT:

- EZ-IO Driver
- EZ-IO needle set
- 10 ml syringe
- Normal Saline IV solution, regular IV tubing
- Tape
- Sterile Gloves
- Dressing
- Skin prep pad

PROCEDURE:

1. Select appropriate insertion site
2. Prepare insertion site using aseptic technique
3. Identify Landmarks:
   i. **Proximal Tibia**: Palpate tibial tuberosity, move (2) fingers below and medial to it
   ii. **Distal Tibia**: Palpate medial malleolus move fingers two (2) finger width above it. (inside ankle bone)
   iii. **Proximal Humerus**: Adduct arm (humerus against body) with the elbow at 90 degrees, the hand on the umbilicus, and the elbow resting on ground or stretcher. Palpate the mid-shaft humerus continuing proximally toward the humeral head identifying a small protrusion, the greater tuberosity insertion site.

ALS I-19.1
EZ – IO ADULT INTRAOSSEOUS INFUSION (cont.)

4. Prepare the EZ IO driver and appropriate needle set.
5. Stabilize site and insert appropriate needle set.
6. Drill until loss of resistance is felt.
7. Remove EZ-IO driver from needle set while stabilizing catheter hub
8. Remove stylet from catheter.
9. Confirm placement by attempting to aspirate bone marrow or blood
10. Flush with 10 ml of normal saline
11. Assess for signs of infiltration
12. Begin utilizing pressure bag for infusion if IO flushes easily and no infiltration
13. Dress site, secure tubing
14. Monitor EZ-IO site for swelling
15. MAXIMUM 2 ATTEMPTS (2ND ATTEMPT MUST BE AT ALTERNATE SITE)
ALTERNATE VASCULAR SITES FOR PATIENTS IN EXTREMIS

INDICATIONS

- Cardiac arrest
- Severely unstable patient
- To access indwelling lines (PIC, Hickman, etc.), fistulas, or shunts when other sites not readily accessible

CONTRAINDICATIONS

- No blood return on access
- Known infection in line

EQUIPMENT

1. 5 ml sterile saline in 10 ml syringe
2. Alcohol wipes
3. Sterile gloves
4. 19 gauge straight needle 1" (for heparin caps)

PROCEDURE FOR SITES WITH HEPARIN CAP

1. Identify type of site and assess proper needle usage (1" needle would be the best as a 1.5" needle may puncture the catheter).

2. Use sterile gloves.

3. Wipe site with alcohol.

4. Attempt aspiration of blood. If blood return, attach IV tubing.

5. No blood aspirated, proceed to gently flush with 5 ml of sterile saline (if any resistance is met, stop procedure), if no resistance attach IV tubing.

6. Remove syringe barrel leaving needle in place and insert IV tubing tip; tape in place.

7. Regulate drip rate.

8. Inject drugs as needed through IV tubing parts.

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Written: 9/93
Reviewed: 12/95; 4/98; 3/09; 5/11
Revised: 12/95; 3/09
MDC Approval: 10/7/93; 1/4/96; 4/98; 4/7/09
IDPH Approval: 10/20/93; 2/20/96; 1/99; 7/9/09
Implementation: 7/1/94; 5/1/96; 8/1/99; 1/1/10

ALS I-20
TOURNIQUET APPLICATION

INDICATIONS

- Life threatening extremity hemorrhage that cannot be controlled by other means.

CONTRAINDICATIONS

- Non-extremity hemorrhage.
- Proximal extremity location where tourniquet application is not practical.

EQUIPMENT

System approved tourniquet

PROCEDURE

1. Visually inspect injured extremity and avoid placement of tourniquet over joint, angulated or open fracture, stab or gunshot wound sites.

2. Consider pain management as application of a tourniquet is likely to be painful.

3. Apply the tourniquet directly to skin, proximal to the wound, 2-3 inches above the wound or as high as you can go above the wound.

4. Secure tourniquet:
   - Pull the free running end of the self-adhering band tight and securely fasten the band back on itself (if applying to an arm wound). Do not adhere the band past the windlass rod.
   - If applying to a leg wound, the self adhering band must be routed through the friction adapter buckle and fastened back on itself. This will prevent it from loosening when twisting the windlass rod.

5. Twist the windlass rod until bright red bleeding has stopped and the distal pulse is eliminated.

6. Place the windlass rod inside the clip locking it in place. Check for bleeding and distal pulse. If bleeding is not controlled consider additional tightening or applying a second tourniquet side by side to the first tourniquet and reassess.

7. Secure the rod inside the clip with the strap.

8. Record time of tourniquet application.

9. Cover wound with appropriate sterile dressing and/or bandage. Do not cover tourniquet - the device must remain visible.

10. Reassess and document absence of bleeding distal to tourniquet.

11. Remove any improvised tourniquets that might have been previously applied.

12. Prepare patient for transport and reassess effectiveness of the tourniquet every 10 minutes.

ALS I-21.1
13. Ensure receiving hospital staff is aware of tourniquet placement and time tourniquet was applied.

**MANDATORY DOCUMENTATION**

- Location of injury and mechanism involved.
- Methods attempted to control bleeding and the time direct pressure was applied.
- Location of application of tourniquet
- Time of application of tourniquet
- Reassessment of tourniquet and its effectiveness
- Person at receiving hospital to whom use and location of the tourniquet is reported to
SPINAL IMMOBILIZATION

INDICATIONS

- Traumatic head/neck/back pain - blunt and penetrating
- All patients with altered levels of consciousness who sustain trauma above the clavicles
- All patients with sensory or motor deficits following blunt or penetrating neck/back injury
- Significant mechanism of injury
- Patients demonstrating sensory or motor deficits should be considered for short board/KED extrication
- Consider patient exposed to electrical source (i.e. lightning, electrocution)

CONTRAINDICATIONS

- Caution should be used with impaled objects

EQUIPMENT

1. Hard cervical collar
2. Short board/KED
3. Long board with straps
4. Padding material
5. Lateral immobilization/padding

PROCEDURE

1. Secure scene and employ universal precautions.

2. Stabilize head with hands and maintain in-line position.

3. Apply appropriately sized collar.

4. Move patient to long board, apply firm padding as needed to maintain full neutral spinal position. Head padding should be sufficient to limit lateral cervical movement.

4. Secure/tape patient's torso and extremities to board. Infants in car seats should have application of an appropriate collar and lateral immobilization positioned in the car seat.

5. Secure/tape head to padding and long board across forehead and collar.

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Written: 12/95
Reviewed: 3/00; 3/09; 5/11
Revised: 3/00; 3/09
MDC Approval: 1/4/96; 3/00; 4/7/09
IDPH Approval: 2/20/96; 5/00; 7/9/09
Implementation: 5/1/96; 10/00; 1/1/10

ALS I-22
LATEX ALLERGIC PATIENTS

INDICATIONS

- Patients with known sensitivity to latex
- Patients with onset of respiratory or dermatological signs and symptoms

CONTRAINDICATIONS

- None

EQUIPMENT

LATEX FREE products for:

1. AIRWAY:
   a. Oral/Nasal airways
   b. Suction catheters
   c. BVM/masks
   d. $O_2$ tubing
   e. Endotracheal tubes
   f. Stylets

2. IV:
   a. Tourniquets
   b. Gloves
   c. Tape

When utilizing other medical equipment such as stethoscopes or blood pressure cuffs, provide a barrier between the patient and the device, for example Kerlix, 4 x 4’s, cloth, etc.

PROCEDURE

1. Utilize latex free products whenever possible

2. If a patient experiences an onset of symptoms (i.e., respiratory and/or dermatological signs and symptoms) and routine, latex gloves have been utilized:
   a) DO NOT REMOVE GLOVES.
   b) PLACE LATEX FREE GLOVES OVER LATEX GLOVES, AS A SECOND PAIR.

3. MEDICATION ADMINISTRATION: Medication should not be drawn from a multi-dose vial, if possible. Medication drawn up in a syringe must be given immediately after withdrawing the medication.

4. BANDAGING: Secure bandaged sites with cloth or silk tape.

5. TREATMENT OF REACTION: See Allergic Reaction SMO for treatment of a latex reaction.
## ABBREVIATIONS/ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ABCs</td>
<td>Airway, Breathing, Circulation</td>
</tr>
<tr>
<td>ABT</td>
<td>Advanced Bioterrorism Triage</td>
</tr>
<tr>
<td>ALS</td>
<td>Advanced Life Support</td>
</tr>
<tr>
<td>BLS</td>
<td>Basic Life Support</td>
</tr>
<tr>
<td>BP</td>
<td>Blood Pressure</td>
</tr>
<tr>
<td>BSA</td>
<td>Body Surface Area</td>
</tr>
<tr>
<td>BS</td>
<td>Blood Sugar</td>
</tr>
<tr>
<td>BSI</td>
<td>Body Substance Isolation</td>
</tr>
<tr>
<td>BVM</td>
<td>Bag valve Mask</td>
</tr>
<tr>
<td>CO</td>
<td>Carbon monoxide</td>
</tr>
<tr>
<td>CP</td>
<td>Chest Pain</td>
</tr>
<tr>
<td>CPAP</td>
<td>Non-Invasive Pressure Support Ventilation</td>
</tr>
<tr>
<td>CPR</td>
<td>Cardiopulmonary Resuscitation</td>
</tr>
<tr>
<td>CRIC</td>
<td>Cricothyrotomy</td>
</tr>
<tr>
<td>CSHN</td>
<td>Children with Special Healthcare Needs</td>
</tr>
<tr>
<td>ECP</td>
<td>Emergency Communication Physician</td>
</tr>
<tr>
<td>ED</td>
<td>Emergency Department</td>
</tr>
<tr>
<td>EPI</td>
<td>Epinephrine</td>
</tr>
<tr>
<td>ET</td>
<td>Endotracheal Tube</td>
</tr>
<tr>
<td>ETOH</td>
<td>Alcohol</td>
</tr>
<tr>
<td>GCS</td>
<td>Glasgow Coma Scale</td>
</tr>
<tr>
<td>HR</td>
<td>Heart Rate</td>
</tr>
<tr>
<td>IM</td>
<td>Intramuscular</td>
</tr>
<tr>
<td>IN</td>
<td>Intranasal</td>
</tr>
<tr>
<td>IV</td>
<td>Intravenous</td>
</tr>
<tr>
<td>IVP</td>
<td>Intravenous Push</td>
</tr>
<tr>
<td>MAD</td>
<td>Mucosal Atomization Device</td>
</tr>
<tr>
<td>NP</td>
<td>Nasopharyngeal</td>
</tr>
<tr>
<td>NRB</td>
<td>Non-rebreather Mask</td>
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<tr>
<td>NS</td>
<td>Normal Saline</td>
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<tr>
<td>NTG</td>
<td>Nitroglycerin</td>
</tr>
<tr>
<td>OB</td>
<td>Obstetrical</td>
</tr>
<tr>
<td>OP</td>
<td>Oropharyngeal</td>
</tr>
<tr>
<td>PGCS</td>
<td>Pediatric Glasgow Coma Scale</td>
</tr>
<tr>
<td>PO</td>
<td>By mouth</td>
</tr>
<tr>
<td>PPE</td>
<td>Personnel Protective Equipment</td>
</tr>
<tr>
<td>PR</td>
<td>Per Rectum</td>
</tr>
<tr>
<td>PRMC</td>
<td>Pediatric Routine Medical Care</td>
</tr>
<tr>
<td>PRTC</td>
<td>Pediatric Routine Trauma Care</td>
</tr>
<tr>
<td>PSC</td>
<td>Primary Stroke Center</td>
</tr>
<tr>
<td>RMC</td>
<td>Routine Medical Care</td>
</tr>
<tr>
<td>ROSC</td>
<td>Return of Spontaneous Circulation</td>
</tr>
<tr>
<td>RR</td>
<td>Respiratory Rate</td>
</tr>
<tr>
<td>RTC</td>
<td>Routine Trauma Care</td>
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<tr>
<td>S/S</td>
<td>Signs and Symptoms</td>
</tr>
<tr>
<td>SBP</td>
<td>Systolic Blood Pressure</td>
</tr>
<tr>
<td>SL</td>
<td>Sublingual</td>
</tr>
<tr>
<td>SMO</td>
<td>Standing Medical Orders</td>
</tr>
<tr>
<td>SRC</td>
<td>STEMI Receiving Center</td>
</tr>
<tr>
<td>VS</td>
<td>Vital Signs</td>
</tr>
</tbody>
</table>

ALS I-24.1
EMS REGION XI CHICAGO

DRUG TABLE
<table>
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<tr>
<th>GENERIC DRUG NAME</th>
<th>PAGE</th>
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<td>Amiodarone</td>
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<td>Aspirin</td>
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<tr>
<td>Atropine: Bradycardia</td>
<td>6</td>
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<tr>
<td>Atropine: Nerve Agent/Organophosphate Poisoning</td>
<td>7</td>
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<tr>
<td>Calcium Chloride 10%</td>
<td>8</td>
</tr>
<tr>
<td>Dextrose</td>
<td>9</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>10</td>
</tr>
<tr>
<td>Diazepam</td>
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</tr>
<tr>
<td>Epinephrine: Cardiac Arrest</td>
<td>12</td>
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<tr>
<td>Epinephrine: Neonatal Resuscitation</td>
<td>13</td>
</tr>
<tr>
<td>Epinephrine: Pediatric Bradycardia</td>
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<tr>
<td>Epinephrine: Severe Respiratory Distress</td>
<td>15</td>
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<tr>
<td>Epinephrine: Allergic Reaction/Anaphylaxis</td>
<td>16</td>
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<tr>
<td>Fentanyl</td>
<td>17</td>
</tr>
<tr>
<td>Glucagon</td>
<td>18</td>
</tr>
<tr>
<td>Glucose, Oral</td>
<td>19</td>
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<tr>
<td>Ipratropium</td>
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<tr>
<td>Lorazepam</td>
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<tr>
<td>Midazolam</td>
<td>22</td>
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<tr>
<td>Morphine Sulfate</td>
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<td>Naloxone</td>
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<td>Nitroglycerin</td>
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<tr>
<td>Ondansetron</td>
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<tr>
<td>Oxygen</td>
<td>27</td>
</tr>
<tr>
<td>Pralidoxime</td>
<td>28</td>
</tr>
<tr>
<td>Sodium Bicarbonate 8.4%</td>
<td>29</td>
</tr>
<tr>
<td>DRUG NAME - GENERIC</td>
<td>Adenosine</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>DRUG NAME - TRADE</td>
<td>Adenocard</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Antiarrhythmic</td>
</tr>
<tr>
<td>DOSAGE FORMS</td>
<td>6 mg/2 mL, Injectable, Preload</td>
</tr>
<tr>
<td>ACTION(S)</td>
<td>- Slows conduction through AV node and interrupts AV reentry pathways to restore normal sinus rhythm</td>
</tr>
<tr>
<td>INDICATIONS</td>
<td>- For Stable Patients: Treatment of regular, narrow complex supraventricular tachycardia (SVT)</td>
</tr>
</tbody>
</table>
| CONTRAINDICATIONS   | - Known or documented hypersensitivity  
|                     |   - Sick sinus syndrome  
|                     |   - 2nd or 3rd degree AV block  
|                     |   - Poison or drug-induced tachycardia  
|                     |   - Atrial fibrillation/flutter  
|                     |   - Ventricular tachycardia  
|                     |   - Wolff-Parkinson-White (WPW) syndrome  
|                     |   - Use with caution in asthma and COPD |
| ADULT DOSE / ROUTE  | - Antecubital IV access  
|                     |   - Initial dose: 6 mg rapid IV (over 1-2 seconds) followed immediately by 10 mL rapid saline flush and extremity elevation  
|                     |   - If first dose does not terminate dysrhythmia in 1-2 minutes, give 12 mg rapid IV followed by 10 mL rapid saline flush and extremity elevation |
| PEDIATRIC DOSE / ROUTE | - Antecubital IV access, if possible  
|                     |   - Initial dose of 0.1 mg/kg rapid IV/IO over 1-2 seconds followed immediately by 2-5 mL rapid saline flush and extremity elevation  
|                     |   - Max initial dose 6 mg  
|                     |   - If first dose does not terminate SVT in 1-2 minutes, give 0.2 mg/kg rapid IV/IO followed immediately by 2-5 mL rapid saline flush and extremity elevation. Max repeat dose 12 mg |
| SIDE EFFECTS        | - Common reactions are generally mild and short-lived: sense of impending doom, flushing, chest pressure, throat tightness, numbness  
|                     |   - Patients may have a brief episode of one or more transient dysrhythmias, which may include asystole  
<p>|                     |   - Adenosine is a respiratory stimulant; can exacerbate asthma and COPD |</p>
<table>
<thead>
<tr>
<th>DRUG NAME - GENERIC</th>
<th>Albuterol</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRUG NAME - TRADE</td>
<td>Proventil, Ventolin, Proair</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Bronchodilator, beta agonist</td>
</tr>
<tr>
<td>DOSAGE FORMS</td>
<td>0.083%, 2.5 mg/3 mL, for Inhalation</td>
</tr>
<tr>
<td>ACTION(S)</td>
<td>- Bronchial smooth muscle relaxation via beta-2 receptors.</td>
</tr>
</tbody>
</table>
| INDICATIONS         | - Asthma  
                      - Bronchitis with bronchospasm  
                      - COPD with wheezing  
                      - Allergic reaction/anaphylaxis with wheezing |
| CONTRAINDICATIONS   | - Known or documented hypersensitivity  
                      - Use with caution in patients with cardiovascular disease history, tachycardia secondary to cardiac condition, croup |
| ADULT DOSE / ROUTE  | 2.5 mg of 0.083% (3 mL) via nebulizer (6 LPM oxygen) until mist stops, usually 5-15 minutes. |
| PEDIATRIC DOSE / ROUTE | 2.5 mg of 0.083% (3 mL) via nebulizer (6 LPM oxygen) until mist stops, usually 5-15 minutes. |
| SIDE EFFECTS        | - Common side effects include palpitations, tachydysrhythmia, anxiety, tremors, nausea/vomiting  
                      - Rarely, paradoxical bronchospasm can occur |
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Amiodarone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Pacerone, Cordarone</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Antiarrhythmic</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>150 mg/3ml, Vial</td>
</tr>
</tbody>
</table>
| **ACTION(S)**           | - Class III antiarrhythmic which inhibits adrenergic stimulation  
                          - Affects sodium, potassium, and calcium channels  
                          - Increases the cardiac refractory period and prolongs action potential and repolarization in myocardium  
                          - Decreases AV conduction and sinus node function |
| **INDICATIONS**         | - Cardiac arrest with shock refractory ventricular fibrillation (V-Fib) or pulseless ventricular tachycardia (V-Tach) |
| **CONTRAINDICATIONS**   | - No Contraindications in pulseless cardiac arrest  
                          - Do not administer to patients with return of spontaneous circulation/pulse |
| **ADULT DOSE / ROUTE**  | - 300 mg IV/IO bolus after 3rd defibrillation. Repeat dose of 150 mg IV/IO bolus after 5th defibrillation if patient remains in pulseless shockable rhythm |
| **PEDIATRIC DOSE / ROUTE** | - Ventricular Fibrillation/Pulseless Ventricular Tachycardia: Amiodarone 5 mg/kg IV/IO. May Repeat x2.  
                          - Max dose 300mg |
| **SIDE EFFECTS**        | - Common side effects include hypotension, bradycardia, AV block, dysrhythmias, nausea, vomiting  
                          - QT prolongation |
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Aspirin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Ecotrin, Bayer</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Antiplatelet agent</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>81 mg, chewable</td>
</tr>
</tbody>
</table>
| **ACTION(S)**           | - Inhibits synthesis of prostaglandin by cyclooxygenase  
                          | - Inhibits platelet aggregation  
                          | - Has antipyretic and analgesic activity |
| **INDICATIONS**         | - Suspected acute coronary syndrome (ACS) or chest pain suspicious for cardiac origin |
| **CONTRAINDICATIONS**   | - Known or documented hypersensitivity to aspirin or NSAIDS  
<pre><code>                      | - Bleeding diathesis, hemophilia, GI bleeding/active ulcers, hemorrhagic stroke, history of bleeding or clotting disorders |
</code></pre>
<p>| <strong>ADULT DOSE / ROUTE</strong>  | - 324 mg (4 x 81 mg chewable tablets), chewed and swallowed |
| <strong>PEDIATRIC DOSE / ROUTE</strong> | N/A |
| <strong>SIDE EFFECTS</strong>        | - Possible side effects include bleeding, stomach irritation, nausea and vomiting |</p>
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Atropine: Symptomatic Bradycardia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Atropine</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Anticholinergic</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>1 mg/10 mL, Injectable, Preload</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Reverses cholinergic-mediated decreases in heart rate. Increases SA and AV node conduction</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Symptomatic bradycardia</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- No absolute contraindications for ACLS</td>
</tr>
<tr>
<td><strong>ADULT DOSE / ROUTE</strong></td>
<td>- Bradycardia: 0.5 mg rapid IV q 3-5 minutes up to 3 mg total</td>
</tr>
<tr>
<td><strong>PEDIATRIC DOSE / ROUTE</strong></td>
<td>- Bradycardia: 0.02 mg/kg rapid IV/IO. Max single dose 0.5 mg. May repeat once.</td>
</tr>
<tr>
<td><strong>SIDE EFFECTS</strong></td>
<td>- Decreased secretions/dry mouth, intense facial flushing and hot skin temperature, blurred vision or pupil dilation, photophobia, tachycardia, restlessness</td>
</tr>
<tr>
<td>DRUG NAME - GENERIC</td>
<td>Atropine: Nerve Agent and Organophosphate Poisoning</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>DRUG NAME - TRADE</td>
<td>Atropine, AtroPen, component of Mark 1 Kits and DuoDote</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Anticholinergic, antidote for organophosphate and nerve agent poisoning</td>
</tr>
<tr>
<td>DOSAGE FORMS</td>
<td>Chempak atropine: 0.4mg/ml (20 mg vial)</td>
</tr>
<tr>
<td></td>
<td>Duodote: 2 mg atropine</td>
</tr>
<tr>
<td></td>
<td>Mark 1 Kit: 2 mg atropine</td>
</tr>
<tr>
<td>ACTION(S)</td>
<td>- Competitively inhibits action of acetylcholine at muscarinic receptor sites. Receptors affected include salivary, bronchial, sweat glands, eyes, heart and GI tract (most-to-least sensitive).</td>
</tr>
<tr>
<td></td>
<td>- Increases SA and AV node conduction</td>
</tr>
<tr>
<td></td>
<td>- Dries secretions</td>
</tr>
<tr>
<td>INDICATIONS</td>
<td>For the management of toxicity caused by organophosphate insecticides and nerve agents poisoning (e.g. tabun, sarin, soman) including muscle fasiculations, nausea and vomiting, copious secretions, bradycardia, weakness, shortness of breath, unconsciousness, convulsions, paralysis and apnea.</td>
</tr>
<tr>
<td>CONTRAINDICATIONS</td>
<td>- Known or documented hypersensitivity in non-ACLS/nerve agent/organophosphate scenarios</td>
</tr>
<tr>
<td>ADULT DOSE / ROUTE</td>
<td>- Nerve Agent/Organophosphate Poisoning: 2 mg IM and titrate until desired effect (drying of tracheobronchial secretions, improvement of breathing and bradycardia). No max dose.</td>
</tr>
<tr>
<td>PEDIATRIC DOSE / ROUTE</td>
<td>- Pediatric nerve agent/organophosphate exposure dosages are not included in the Drug Appendix. See Protocol: HAZ MAT / NERVE AGENTS - PEDIATRIC - ALS</td>
</tr>
<tr>
<td>SIDE EFFECTS</td>
<td>- Decreased secretions/dry mouth, intense facial flushing and hot skin temperature, blurred vision or pupil dilation, photophobia, tachycardia, restlessness</td>
</tr>
<tr>
<td><strong>DRUG NAME - GENERIC</strong></td>
<td>Calcium Chloride 10%</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>NONE</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Calcium Salt, Electrolyte replacement</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>10%, 1 gram/10 mL, Injectable, Preload</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Stabilize cardiac cell membrane in patients with hyperkalemia who are unstable or in cardiac arrest</td>
</tr>
</tbody>
</table>
| **INDICATIONS**          | - Suspected hyperkalemia with cardiac arrest or dysrhythmia  
- Renal patients with QRS>0.12 seconds  
- Crush injuries with victim still entrapped when QRS widens, peaked T waves, or ectopy |
| **CONTRAINDICATIONS**    | - Known or documented hypersensitivity  
- Known or suspected digoxin toxicity  
**NOTE:** Ensure proper IV function. IV extravasation is toxic to soft tissues. |
<p>| <strong>ADULT DOSE / ROUTE</strong>   | - 1 Amp (10 ml) of 10% solution IV/IO |
| <strong>PEDIATRIC DOSE / ROUTE</strong> | - 20 mg/kg IV/IO slow push (0.2 mL/kg of 10% solution. Max single dose 10 ml) |
| <strong>SIDE EFFECTS</strong>         | - Minimal when used as indicated. |</p>
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Dextrose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>D50, Glucose</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Glucose elevating agent</td>
</tr>
</tbody>
</table>
| **DOSAGE FORMS**        | Dextrose 10% (D10), 25 grams/250 ml water OR 50 grams/500 mL water  
                          | Dextrose 50% (D50), 25 grams/50 ml injectable preload |
| **ACTION(S)**           | - Increase in blood glucose concentrations |
| **INDICATIONS**         | - Hypoglycemia |
| **CONTRAINDICATIONS**   | - Known or documented hypersensitivity to dextrose, corn or corn products  
                          | - Hyperglycemia |
| **ADULT DOSE / ROUTE**  | - Dextrose 10% (D10) 100 mL IV boluses until mental status improves or BS > 60mg/dL.  
                          | Note: 250 mL of D10 = 25 g glucose (same amount as 1 Amp of D50)  
                          | - Alternate: Dextrose 50% (D50) 1 Amp IV push |
| **PEDIATRIC DOSE / ROUTE** | - All Ages: Dextrose 10% (D10) 5 mL/kg (0.5 g/kg) slow IV/IO using buretrol. Repeat slow IV as indicated.  
                          | Max 250 ml (25g).  
                          | - Newly born/Neonate: 15mL of Dextrose 10% (D10) slow IV/IO using buretrol. Repeat as indicated.  
<pre><code>                      | - Alternative: &gt; 8 years old: 1-2 mL/kg of Dextrose 50% (D50) |
</code></pre>
<p>| <strong>SIDE EFFECTS</strong>        | - Hyperglycemia, warmth/burning from IV injection, diuresis, thrombophlebitis, tissue necrosis if IV/IO infiltrates. |</p>
<table>
<thead>
<tr>
<th>DRUG NAME - GENERIC</th>
<th>Diazepam</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRUG NAME - TRADE</td>
<td>Valium, Diastat</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Benzodiazepine, sedative-hypnotic, anticonvulsant</td>
</tr>
<tr>
<td>DOSAGE FORMS</td>
<td>5 mg/1 mL</td>
</tr>
</tbody>
</table>

**ACTION(S)**
- Suppresses seizures, causes sedation and muscle relaxation
- Enhances effects of GABA neurotransmitter
- CNS depressant

**INDICATIONS**
- Active seizure
- Alternative to midazolam and lorazepam for seizures

**CONTRAINDICATIONS**
- Known or documented hypersensitivity
- Acute narrow angle glaucoma
- Severe respiratory insufficiency (except during mechanical ventilation)
- Caution in COPD, renal failure, CHF, elderly, pregnancy, concomitant alcohol or CNS depressant medication use

**ADULT DOSE / ROUTE**
- 2-5 mg IV/IO. May repeat x1 after 5 min.
- Max dose: 10mg

**PEDIATRIC DOSE / ROUTE**
- 0.1-0.3 mg/kg IV/IO slow push over 2-3 min. May repeat x1 after 5 min.
- Max dose <5 years: 5mg, ≥ 5 years: 10mg

**SIDE EFFECTS**
- Excessive CNS depression, apnea, amnesia, confusion, ataxia, hypotension, euphoria, and rarely paradoxical reactions (aggressiveness, restlessness)
## Diphenhydramine

<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Diphenhydramine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Benadryl</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Antihistamine</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>50 mg/1 mL</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Binds and blocks histamine-1 receptors on skin, lungs, blood vessels, and GI smooth muscle</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Allergic reactions and anaphylaxis</td>
</tr>
<tr>
<td></td>
<td>- Urticaria and itching related to allergic reactions</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- Known or documented hypersensitivity</td>
</tr>
<tr>
<td></td>
<td>- Caution in presence of CNS depressants like alcohol and drugs</td>
</tr>
<tr>
<td><strong>ADULT DOSE / ROUTE</strong></td>
<td>- 50 mg IM or slow IV</td>
</tr>
<tr>
<td><strong>PEDIATRIC DOSE / ROUTE</strong></td>
<td>- 1 mg/kg IM or slow IV/IO</td>
</tr>
<tr>
<td></td>
<td>- Max dose 50 mg</td>
</tr>
<tr>
<td><strong>SIDE EFFECTS</strong></td>
<td>- Drowsiness/sedation, dizziness, excitable state (paradoxical reaction in some children), wheezing/thickening of bronchial secretions, dry mouth</td>
</tr>
<tr>
<td><strong>DRUG NAME - GENERIC</strong></td>
<td><strong>Epinephrine: Cardiac Arrest</strong></td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Epinephrine</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Adrenergic agonist</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>1:10,000 (0.1 mg/mL), Injectable, Preload</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Stimulates alpha and beta receptors increasing coronary and cerebral perfusion pressure during CPR</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Cardiac arrest</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- None in cardiac arrest.</td>
</tr>
</tbody>
</table>
| **ADULT DOSE / ROUTE** | - 1 mg (10 mL of the 0.1mg/mL concentration [1:10,000]) IV/IO  
                             - Repeat q 3-5min while pulseless |
| **PEDIATRIC DOSE / ROUTE** | - 0.01 mg/kg (0.1 mL/kg of the 0.1mg/mL concentration [1:10,000]) IV/IO  
                              - Repeat q 3-5 min while pulseless |
<p>| <strong>SIDE EFFECTS</strong>       | - None in cardiac arrest        |</p>
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th><strong>Epinephrine: Neonatal Resuscitation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Epinephrine</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Adrenergic agonist</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>1:10,000 (0.1 mg/mL), Injectable, Preload</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Stimulates alpha and beta receptors increasing coronary and cerebral perfusion pressure</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Neonatal/newborn bradycardia/cardiac arrest</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- None in cardiac arrest.</td>
</tr>
<tr>
<td><strong>ADULT DOSE / ROUTE</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>PEDIATRIC DOSE / ROUTE</strong></td>
<td>- 0.3 mL IV/IO of the 0.1mg/mL concentration (1:10,000)</td>
</tr>
<tr>
<td></td>
<td>- Repeat q 3-5 minutes while pulseless</td>
</tr>
<tr>
<td><strong>SIDE EFFECTS</strong></td>
<td>- None in cardiac arrest</td>
</tr>
<tr>
<td><strong>DRUG NAME - GENERIC</strong></td>
<td>Epinephrine: Pediatric Bradycardia</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Epinephrine</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Adrenergic agonist</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>1:10,000 (0.1 mg/mL), Injectable, Preload</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Stimulates alpha and beta receptors increasing heart rate and blood pressure</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Pediatric: Bradycardia pulse &lt;60 AND severe cardiorespiratory compromise</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- None</td>
</tr>
<tr>
<td><strong>ADULT DOSE / ROUTE</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>PEDIATRIC DOSE / ROUTE</strong></td>
<td>- 0.01 mg/kg (0.1 mL/kg of the 0.1mg/mL concentration [1:10,000]) IV/IO</td>
</tr>
<tr>
<td></td>
<td>- Repeat q 3-5 min during bradycardia/cardiorespiratory compromise</td>
</tr>
<tr>
<td><strong>SIDE EFFECTS</strong></td>
<td>- Palpitations, tachycardia, hypertension, angina, anxiety, tremors, headache</td>
</tr>
<tr>
<td><strong>DRUG NAME - GENERIC</strong></td>
<td>Epinephrine: Severe Respiratory Distress</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Epinephrine</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Adrenergic agonist</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>1:1,000 (1 mg/mL) vial or ampule</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Stimulates alpha and beta receptors resulting in bronchodilation.</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Rescue therapy for severe respiratory distress from bronchospasm associated with asthma, COPD.</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- Use with caution if patient has history of hypertension, angina, cardiac disease or hyperthyroidism</td>
</tr>
<tr>
<td><strong>ADULT DOSE / ROUTE</strong></td>
<td>- 0.3 mg IM (0.3 mL of 1 mg/mL concentration [1:1,000])</td>
</tr>
<tr>
<td><strong>PEDIATRIC DOSE / ROUTE</strong></td>
<td>- 0.01 mg/kg IM (0.01 mL/kg of 1 mg/mL concentration [1:1,000]). Maximum 0.3 mg per single dose.</td>
</tr>
<tr>
<td><strong>SIDE EFFECTS</strong></td>
<td>- Palpitations, tachycardia, hypertension, angina, anxiety, tremors, headache</td>
</tr>
<tr>
<td><strong>DRUG NAME - GENERIC</strong></td>
<td>Epinephrine: Allergic Reaction and/or Anaphylaxis</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Epinephrine, EpiPen, EpiPen Jr</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Adrenergic agonist</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>1:1,000 (1 mg/mL), 1:10,000 (0.1 mg/mL)</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Stimulates alpha and beta receptors resulting in increased blood pressure, increased heart rate, bronchodilation.</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Allergic reaction and/or anaphylaxis</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- None in anaphylaxis</td>
</tr>
<tr>
<td></td>
<td>- Use with caution if patient has history of hypertension, angina, cardiac disease or hyperthyroidism</td>
</tr>
</tbody>
</table>
| **ADULT DOSE / ROUTE** | ALS and BLS - 0.3 mg IM (0.3 mL of 1 mg/mL concentration [1:1,000]) May repeat x1 in 5-10 min.  
|                       | ALS Only - Sustained severity or deterioration: 0.1 mg IV (1 ml of 0.1mg/mL concentration [1:10,000]). May repeat every 5 minutes as indicated. |
| **PEDIATRIC DOSE / ROUTE** | ALS - 0.01 mg/kg IM (0.01 mL/kg of 1mg/mL concentration [1:1,000]). May repeat x1 in 5-10 min.  
|                       | Sustained severity or deterioration: 0.01 mg IV/IO (0.1 mL/kg of 0.1 mg/mL concentration [1:10,000]). May repeat every 5 minutes as indicated. |
|                       | BLS - If length < 48 inches, 0.15mg IM (0.15 mL of 1mg/mL concentration [1:1,000])  
|                       | If length ≥ 48 inches, 0.3 mg IM (0.3 mL of 1mg/mL concentration [1:1,000])  
<p>|                       | - If second dose indicated, contact OLMC |
| <strong>SIDE EFFECTS</strong>       | - Palpitations, tachycardia, hypertension, angina, anxiety, tremors, headache |</p>
<table>
<thead>
<tr>
<th>DRUG NAME - GENERIC</th>
<th>Fentanyl</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRUG NAME - TRADE</td>
<td>Sublimaze</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Opioid analgesic</td>
</tr>
<tr>
<td>DOSAGE FORMS</td>
<td>100 mcg/2 mL</td>
</tr>
</tbody>
</table>
| ACTION(S)           | - Opioid agonist  
- Potent narcotic analgesic with rapid onset and short duration (30-60 minutes) |
| INDICATIONS         | - Pain related to acute coronary syndrome unresponsive to nitroglycerin.  
- Pain related to burns.  
- Pain related to trauma.  
- Pain related to cardioversion or pacing  
- Severe pain as per Pain Management protocol |
| CONTRAINDICATIONS   | - Known or documented allergy to fentanyl or other opioid analgesics  
- Pregnancy with active labor  
- Dental pain  
- Chronic pain patients who are not part of hospice or palliative care  
- Hypoventilation or respiratory depression  
- Pediatrics less than 1 year of age  
- USE WITH CAUTION in the following patients: GCS<15, hypotension, hypoxia |
| ADULT DOSE / ROUTE  | - 1 mcg/kg IV or IM/IO/IN.  
- ≤ 65 years of age – Max dose 100 mcg  
> 65 years of age – Max dose 50 mcg |
| PEDIATRIC DOSE / ROUTE | Must be > 1 year old  
1 mcg/kg IV or IM/IO/IN, not to exceed adult max dose. No repeat dose. |
| SIDE EFFECTS        | - Respiratory depression, hypotension, bradycardia, muscle rigidity, delirium, dizziness, headache, nausea, vomiting  
- Rapid infusion may cause chest wall rigidity |
<table>
<thead>
<tr>
<th>DRUG NAME - GENERIC</th>
<th>Glucagon</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRUG NAME - TRADE</td>
<td>GlucaGen, Glucagon</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Glucose elevating agent</td>
</tr>
<tr>
<td>DOSAGE FORMS</td>
<td>1 mg Solvent with 1 mL solute</td>
</tr>
<tr>
<td>ACTION(S)</td>
<td>- Causes a breakdown of stored glycogen to raise blood glucose levels</td>
</tr>
<tr>
<td>INDICATIONS</td>
<td>- Hypoglycemic patient without venous access and inability to administer oral glucose paste (see Glucose, oral)</td>
</tr>
<tr>
<td>CONTRAINDICATIONS</td>
<td>- Known or documented hypersensitivity to glucagon</td>
</tr>
<tr>
<td>ADULT DOSE / ROUTE</td>
<td>- 1 mg IM/IN</td>
</tr>
</tbody>
</table>
| PEDIATRIC DOSE / ROUTE | - ≤ 8 yo = 0.5 mg IM  
<pre><code>                    | &gt; 8 yo = 1 mg IM |
</code></pre>
<p>| SIDE EFFECTS        | - Nausea/vomiting, dizziness, headache |</p>
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Glucose, Oral</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Glutose, Insta-Glucose</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Glucose elevating agent</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>15 grams of glucose in an oral gel</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Increases serum glucose level</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Hypoglycemia in alert patients who are able to follow commands and swallow</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- Uncooperative or depressed mental status</td>
</tr>
<tr>
<td><strong>ADULT DOSE / ROUTE</strong></td>
<td>- One Tube (15 g)</td>
</tr>
</tbody>
</table>
| **PEDIATRIC DOSE / ROUTE** | - 1 mo- 4 years: 1/4 tube  
  4- 8 years: 1/2 tube  
  >8 years: 1 tube. |
<p>| <strong>SIDE EFFECTS</strong>       | - Nausea, potential for aspiration in patients with impaired airway reflexes |</p>
<table>
<thead>
<tr>
<th>DRUG NAME - GENERIC</th>
<th>Ipratropium</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRUG NAME - TRADE</td>
<td>Atrovent</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Bronchodilator, Anticholinergic</td>
</tr>
<tr>
<td>DOSAGE FORMS</td>
<td>0.02%, 0.5 mg/2.5 mL for Inhalation</td>
</tr>
</tbody>
</table>
| ACTION(S)           | - Anticholinergic agent  
                      | - Results in bronchial smooth muscle relaxation and bronchodilation |
| INDICATIONS         | - Asthma  
                      | - Bronchitis with bronchospasm  
                      | - COPD with wheezing |
| CONTRAINDICATIONS   | - Known or documented hypersensitivity |
| ADULT & PEDIATRIC DOSE / ROUTE | - 0.5 mg (2.5 mL) via nebulizer (6 LPM oxygen) mixed with albuterol until mist stops, usually 5-15 minutes. |
| SIDE EFFECTS        | - Common side effects include palpitations, tachydysrhythmia, anxiety, tremors, nausea/vomiting  
<pre><code>                  | - Rarely, paradoxical bronchospasm can occur |
</code></pre>
<table>
<thead>
<tr>
<th>DRUG NAME - GENERIC</th>
<th>Lorazepam</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRUG NAME - TRADE</td>
<td>Ativan</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Benzodiazepine, sedative-hypnotic, anticonvulsant</td>
</tr>
<tr>
<td>DOSAGE FORMS</td>
<td>2 mg/1 mL</td>
</tr>
</tbody>
</table>
| ACTION(S)           | - Suppresses seizures, causes sedation and muscle relaxation  
                     | - Enhances effects of GABA neurotransmitter  
                     | - CNS depressant |
| INDICATIONS         | - Active seizure  
                     | - Behavioral emergency not responsive to verbal de-escalation.  
                     | - Alternative to midazolam for seizures and behavioral emergencies |
| CONTRAINDICATIONS   | - Known or documented allergy/hypersensitivity  
                     | - Acute narrow angle glaucoma  
                     | - Severe respiratory depression (except during mechanical ventilation)  
                     | - Caution in COPD, renal failure, CHF, elderly, pregnancy, concomitant alcohol or CNS depressant medication use. |
| ADULT DOSE / ROUTE  | - Seizure: 2mg IV/IO/IM/IN may repeat X 1  
<pre><code>                 | - Behavioral emergency: 2mg IV, IM, IN (Age &gt; 60 contact OLMC for approval) |
</code></pre>
<p>| PEDIATRIC DOSE / ROUTE | - Seizure: 0.1mg/kg IV/IO/IN/IM. May repeat x1. Max single dose 2mg max total dose 4 mg. |
| SIDE EFFECTS        | - Excessive CNS depression, apnea, amnesia, confusion, ataxia, hypotension, euphoria, and rarely paradoxical reactions (aggressiveness, restlessness) |</p>
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Midazolam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Versed</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Benzodiazepine, sedative-hypnotic, anticonvulsant</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>10 mg/2 mL</td>
</tr>
</tbody>
</table>
| **ACTION(S)**          | - Suppresses seizures, causes sedation and muscle relaxation  
                        | - Enhances effects of GABA neurotransmitter |
| **INDICATIONS**        | - Active seizure  
                        | - Behavioral emergency not responsive to verbal de-escalation |
| **CONTRAINDICATIONS**  | - Known or documented allergy/hypersensitivity  
                        | - Acute narrow angle glaucoma  
                        | - Severe respiratory depression (except during mechanical ventilation)  
                        | - Caution in COPD, renal failure, CHF, elderly, pregnancy, concomitant alcohol or CNS depressant medication use |
| **ADULT DOSE / ROUTE** | - Seizure: 2-5 mg IV/IO, may repeat X1 after 5 minutes if seizures persist (10mg max) **OR**  
                        | 10 mg IN or 5mg IM.  
                        | - Behavioral Emergency: 2mg IV, may repeat X1 after 5 minutes **OR**  
                        | 5mg IN/IM (Age > 60 contact OLMC for approval) |
| **PEDIATRIC DOSE / ROUTE** | - Seizures 0.1 mg/kg slow IV/IO/IM or 0.2 mg/kg IN. If seizures continue > 5 minutes, may repeat X1.  
                        | - Maximum total dose: < 6 years = 6 mg  
<pre><code>                    | ≥ 6 years = 10 mg. |
</code></pre>
<p>| <strong>SIDE EFFECTS</strong>       | - Excessive CNS depression, apnea, amnesia, confusion, ataxia, hypotension, euphoria, and rarely paradoxical reactions (aggressiveness, restlessness) |</p>
<table>
<thead>
<tr>
<th>DRUG NAME - GENERIC</th>
<th>Morphine Sulfate</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRUG NAME - TRADE</td>
<td>Duramorph</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Opioid analgesic</td>
</tr>
<tr>
<td>DOSAGE FORMS</td>
<td>10 mg/1 mL, Injectable, carpuject OR 10 mg/10 mL (Alternate acceptable concentrations when drug shortage = 2 mg/1ml, 4 mg/1ml, 5 mg/1ml for total of 8-10 mg)</td>
</tr>
</tbody>
</table>
| ACTION(S)           | - Opioid agonist  
|                     | - Narcotic analgesic |
| INDICATIONS         | - Pain related to acute coronary syndrome unresponsive to nitroglycerin.  
|                     | - Pain related to burns or frostbite  
|                     | - Pain related to trauma.  
|                     | - Pain related to cardioversion or pacing  
|                     | - Severe pain as per Pain Management protocol |
| CONTRAINDICATIONS   | - Known or documented allergy to fentanyl or other opioid analgesics  
|                     | - Pregnancy with active labor  
|                     | - Dental pain  
|                     | - Chronic pain patients who are not part of hospice or palliative care  
|                     | - Hypoventilation or respiratory depression  
|                     | - Pediatrics less than 1 year of age  
|                     | - USE WITH CAUTION in the following patients: GCS<15, hypotension, hypoxia |
| ADULT DOSE / ROUTE  | 0.1mg/kg IV/IO/IM  
|                     | ≤ 65 years of age – Max dose 10 mg  
|                     | > 65 years of age – Max dose 5 mg |
| PEDIATRIC DOSE / ROUTE | Must be > 1 year old  
<p>|                     | 0.1 mg/kg IV/IO/IM, not to exceed adult dose. |
| SIDE EFFECTS        | - Respiratory depression, hypotension, bradycardia, muscle rigidity, delirium, dizziness, headache, nausea, vomiting |</p>
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Naloxone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Narcan</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Opioid antagonist</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>2 mg/2 ml, Prefilled Syringe</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Binds the opioid receptor and blocks the effects of opioids</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Reversal of acute respiratory depression from suspected opioid toxicity</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- None</td>
</tr>
</tbody>
</table>
| **ADULT DOSE / ROUTE** | - ALS 1-2mg mg IV/IO or 2mg nebulized OR IN.  
                           - BLS 2 mg IN |
| **PEDIATRIC DOSE / ROUTE** | - ALS ≤ 20 kg: 0.1 mg/kg IV/IO/IM/IN up to 2 mg. >20 kg: 2 mg IV/IO/IM/IN  
                                - BLS 0-4 years old: 1 mg IN >4 years old 2 mg IN |
<p>| <strong>SIDE EFFECTS</strong>       | - Withdrawal symptoms (agitation, nausea, vomiting), tachycardia, hypertension, seizures. |</p>
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Nitroglycerin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Nitrostat</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Vasodilator</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>0.4 mg (1/150 gr) tablet, OR 0.4 mg metered dose spray</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Smooth muscle relaxant resulting in peripheral vasodilation.</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Ischemic chest pain (angina, AMI), pulmonary edema</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- SBP &lt; 100 mm Hg</td>
</tr>
<tr>
<td></td>
<td>- Known or documented hypersensitivity</td>
</tr>
<tr>
<td></td>
<td>- Recent use of erectile dysfunction medications (sildenafil (Viagra® – within last 24 hours), tadalafil (Cialis® – within last 48 hours), vardenafil (Levitra® – within last 48 hours), or other phosphodiesterase-5 inhibitors</td>
</tr>
<tr>
<td></td>
<td>- Pulmonary hypertension medications (Revatio, Adempas, sildenafil, riociguat) may increase the effects of nitrates</td>
</tr>
<tr>
<td></td>
<td>- Caution in patients with concern for inferior wall/right ventricular myocardial infarction</td>
</tr>
<tr>
<td><strong>ADULT DOSE / ROUTE</strong></td>
<td>- BLS Cardiac Chest Pain: Assist patient with 0.4 mg sublingual tablet or 0.4 mg SL spray. May repeat q 3-5 minutes for continued chest pain if systolic BP ≥ 100. (Max 3 doses)</td>
</tr>
<tr>
<td></td>
<td>- ALS Suspected ACS/Pulmonary Edema: 0.4 mg sublingual tablet (1/150 gr) OR 0.4 mg SL spray. May repeat q 3-5 minutes for continued CP if systolic BP ≥ 100. (Max 3 doses)</td>
</tr>
<tr>
<td><strong>PEDIATRIC DOSE / ROUTE</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>SIDE EFFECTS</strong></td>
<td>- Headache, hypotension, nausea/vomiting, flushing, orthostatic hypotension/syncope</td>
</tr>
<tr>
<td><strong>DRUG NAME - GENERIC</strong></td>
<td>Ondansetron</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>Zofran</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Antiemetic</td>
</tr>
<tr>
<td><strong>DOSAGE FORMS</strong></td>
<td>4 mg/2 mL, Injectable OR 4 mg oral disintegrating tablet (ODT)</td>
</tr>
<tr>
<td><strong>ACTION(S)</strong></td>
<td>- Selective serotonin 5-HT3 receptor antagonist</td>
</tr>
<tr>
<td><strong>INDICATIONS</strong></td>
<td>- Nausea, vomiting</td>
</tr>
<tr>
<td><strong>CONTRAINDICATIONS</strong></td>
<td>- Known or documented hypersensitivity</td>
</tr>
<tr>
<td></td>
<td>- Congenital heart surgery or congenital heart disease</td>
</tr>
<tr>
<td></td>
<td>- Severe hepatic impairment</td>
</tr>
<tr>
<td></td>
<td>- Known or suspected prolonged QT interval</td>
</tr>
<tr>
<td><strong>ADULT DOSE / ROUTE</strong></td>
<td>- 4 mg IV or 4 mg ODT (place on top of tongue and allow to dissolve, then swallow with saliva)</td>
</tr>
<tr>
<td><strong>PEDIATRIC DOSE / ROUTE</strong></td>
<td>- &gt; 1 year old and 10 kg: consider 0.15 mg/kg slow IV max dose 4mg.</td>
</tr>
<tr>
<td></td>
<td>- &gt; 25 kg: 4 mg oral disintegrating tablet (ODT). No oral dose for &lt; 25 kg.</td>
</tr>
<tr>
<td><strong>SIDE EFFECTS</strong></td>
<td>- Diarrhea, headache, lightheadedness.</td>
</tr>
<tr>
<td></td>
<td>- May prolong QT interval</td>
</tr>
<tr>
<td>DRUG NAME - GENERIC</td>
<td>Oxygen</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------</td>
</tr>
<tr>
<td>DRUG NAME - TRADE</td>
<td>N/A</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Medical gas</td>
</tr>
<tr>
<td>ACTION(S)</td>
<td>- Raises the amount of oxygen in the blood and, therefore, the amount delivered to the tissues</td>
</tr>
</tbody>
</table>
| INDICATIONS         | - Hypoxemia  
                        - Respiratory distress  
                        - Shock (decreased oxygenation of tissues) from any cause  
                        - Smoke inhalation  
                        - Carbon monoxide poisoning  
                        - Cardiac Arrest |
| CONTRAINDICATIONS   |         |
| ADULT DOSE / ROUTE  | - Administer oxygen to maintain an oxygen saturation of >94%. 1 L to 15 L per minute (nasal cannula or non-rebreather mask as needed)  
                        - For any critically ill patient (respiratory distress, shock, smoke inhalation, carbon monoxide poisoning or cardiac arrest) 15 L per minute non-rebreather mask |
| PEDIATRIC DOSE / ROUTE |     |
| SIDE EFFECTS        | - Drying and irritating to mucous membranes  
                        - Mild Euphoria |
<table>
<thead>
<tr>
<th><strong>DRUG NAME - GENERIC</strong></th>
<th>Pralidoxime</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRUG NAME - TRADE</strong></td>
<td>2-PAM</td>
</tr>
<tr>
<td><strong>DRUG CLASSIFICATION</strong></td>
<td>Oxime, antidote for organophosphate and nerve agent poisoning</td>
</tr>
</tbody>
</table>
| **DOSAGE FORMS**        | Duodote: 600 mg IM  
Mark 1 Kit: 600 mg IM  
20 ml vial containing 1 gram powder (50 mg/ml) (must be reconstituted with sterile water). |
| **ACTION(S)**           | - Binds to organophosphates and breaks alkyl phosphate-cholinesterase bond to restore activity of acetylcholinesterase |
| **INDICATIONS**         | - For the management of toxicity caused by organophosphate insecticides and nerve agent poisoning (e.g. tabun, sarin, soman) including muscle fasciculations, nausea and vomiting, copious secretions, bradycardia, weakness, shortness of breath, unconsciousness, convulsions, paralysis and apnea.  
- MUST be used in conjunction with atropine |
<p>| <strong>CONTRAINDICATIONS</strong>   | - Documented hypersensitivity |
| <strong>ADULT DOSE / ROUTE</strong>  | - 600 mg IM, may repeat x 2 for total of 1800 mg |
| <strong>PEDIATRIC DOSE / ROUTE</strong> | - Pediatric nerve agent/organophosphate exposure dosages are not included in the Drug Appendix. See Protocol: HAZ MAT / NERVE AGENTS - PEDIATRIC - ALS |
| <strong>SIDE EFFECTS</strong>        | - Hypertension, tachycardia, dizziness, blurred vision |</p>
<table>
<thead>
<tr>
<th>DRUG NAME - GENERIC</th>
<th>Sodium Bicarbonate 8.4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRUG NAME - TRADE</td>
<td>N/A</td>
</tr>
<tr>
<td>DRUG CLASSIFICATION</td>
<td>Electrolyte replacement, Alkalinizing Agent</td>
</tr>
<tr>
<td>Dosage Forms</td>
<td>1 AMP 50 ml [50 mEq] of 8.4% solution, injectable preload</td>
</tr>
</tbody>
</table>
| ACTION(S)           | - Buffers acidosis in chronic renal failure/dialysis patients who are unstable or in cardiac arrest  
|                     | - Shifts potassium into cells  
|                     | - Slows uptake of cyclic antidepressants. |
| INDICATIONS         | - Cardiac arrest or wide complex tachycardia with pulse AND suspected hyperkalemia  
|                     | - Consider with wide complex tachycardia or cardiac arrest secondary to suspected tricyclic antidepressant overdose.  
|                     | - Adult crush injuries with victim still entrapped |
| CONTRAINDICATIONS   | - None for indications as listed |
| ADULT DOSE / ROUTE  | - Adults: Cardiac Arrest/Wide Complex Tachycardia: 1 Amp of 8.4% solution IV/IO  
|                     | - Adults: Crush injury with victim still entrapped: 1 Amp of 8.4% solution in 1 liter NS infused wide open. |
| PEDIATRIC DOSE / ROUTE | Call OLMC |
| SIDE EFFECTS        | - Minimal when used as indicated. |