ADPH Alabama Department of Public Health

OEMST

PATIENT CARE PROTOCOLS
EMT - PARAMEDIC

Fifth Edition Update

JUNE 23, 2010

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ALLERGIC REACTION 4.4

SPECIFIC INFORMATION NEEDED:

A. Present history: Recent exposure of the patient to specific allergen. Route of exposure, e.g., inhaled, oral, intravenous or dermal. Types of common allergens include medications, foods, or insect bites.
B. Past History: Known allergies, previous type of allergic reaction. Previous treatment required.
C. Symptoms: Pruritus (itching), dyspnea, sensation of airway closure, generalized weakness or dizziness.

PHYSICAL ASSESSMENT:

A. Skin- allergic reactions can present as hives, swelling or generalized red skin (may not be present).
B. Pulmonary- bronchoconstriction (wheezing), stridor (severe upper airway constriction), or hoarseness (moderate upper airway obstruction).
C. Edema- facial, tongue and lips of most concern due to potential for airway compromise.
D. Hemodynamic- tachycardia and hypotension.

TREATMENT:

Minor Reaction- No sign of airway, respiratory or hemodynamic compromise. Reaction limited to skin.

A. Airway - monitor for development of increase in severity.
B. Oxygen as needed to maintain oxygen saturation (pulse oximeter) reading >95%.
C. Circulation - IV, Saline lock or large bore, NS at KVO rate. Closely monitor for changes.

Moderate Reaction - Skin rash and mild or moderate respiratory symptoms (wheezing), however, no sign of airway compromise or shock.

A. Airway - monitor for development of respiratory compromise or increase in severity.
B. Breathing - Oxygen 12-15 L/M, with non-rebreather mask.
C. Circulation - IV, Saline lock or large bore, NS at a KVO rate. Monitor for signs of hypotension.
D. Attach cardiac monitor
E. Epinephrine 1:1,000 (CAT A).
   Adults: 0.3 mg (0.3cc), IM (CAT A except CAT B if patient is elderly, has hypertension, or coronary artery disease). May use Epipen
   Pediatrics: 0.01mg/kg up to 0.3 mg, IM. May use pediatric Epipen
F. If wheezing is present, begin inhalation therapy with Albuterol (CAT A).
   Adults: 2.5mg (nebulized, rotohaler, MDI w/spacer).
   Pediatrics: 2.5mg (nebulized, rotohaler, MDI w/spacer).
G. Consider Diphenhydramine (CAT A).
   Adults: 25-50 mg IV, IM.
   Pediatrics: 1 mg/kg IV, IM (do not exceed adult dose).
H. If patient has self-administration device for epinephrine or medications for allergy, the EMT may assist the patient in self-administration.

Major Reaction - Severe respiratory symptoms or signs of airway compromise or shock; field treatment should not delay transport – Load & Go, treat en route.

A. Airway - maintain patency, consider intubation.
B. Breathing - Oxygen 12-15 L/M, with non-rebreather mask.
C. Consider bag-valve-mask assistance if necessary.
D. Circulation - attach cardiac monitor - reassess vital signs frequently.
   - IV, large bore, with normal saline, at fluid bolus rate.
   - Adults - volume challenge 250-500 cc and reassess.
   - **Pediatrics under 8 years of age - volume challenge 20cc/kg and reassess.**

E. Epinephrine 1:1,000 (CAT A).
   Adults: 0.3 mg, (0.3cc) IM every 5 minutes if needed (CAT A except CAT B if patient is elderly, has hypertension, or coronary artery disease).
   Pediatrics: 0.01mg/kg (0.01cc/kg) up to 0.3 mg (0.3cc), IM every 5 minutes if needed.

   NOTE: If the patient is in anaphylactic shock, IV epinephrine (1:10,000) may be given by doctor's order (Cat. B). Adults 0.3mg (3cc) IVP up to every 5 minutes.
   Pediatrics: 0.01mg/kg (0.1cc/kg) up to 0.3 mg (3cc), every 5 minutes IVP as ordered.

F. If wheezing is present, begin inhalation therapy with Albuterol en route (CAT A).
   Adults: 2.5mg (nebulized, rotohaler, MDI w/spacer).
   Pediatrics: 2.5mg (nebulized, rotohaler, MDI w/spacer).

G. Diphenhydramine (CAT A).
   Adults: 25-50 mg IV, IM.
   Pediatrics: 1 mg/kg IV, IM (do not exceed adult dose).

H. If patient has self-administration device for epinephrine or medication for allergy, the EMT may assist the patient in self-administration.

SPECIFIC PRECAUTIONS:

A. Adverse reactions associated with epinephrine:
   - Hypertension, tachycardia, ectopy.
   - Tremor, anxiety, occasional vomiting.
   - Chest pain.

B. Epinephrine is a mixed catecholamine. Its effects on the cardiovascular system include increased heart rate, arrhythmias, and vasoconstriction of the coronary arteries which can also lead to an acute coronary syndrome. Epinephrine is relatively contraindicated in patients with known coronary artery disease, angina or previous heart attack except in life threatening circumstances. In these cases, call OLMD before giving.

C. Epinephrine should be avoided in the elderly unless the benefits of treatment outweigh the risks of arrhythmias, acute coronary syndrome, or uncontrolled hypertension. In this case, call OLMD before giving.
D. The two forms of epinephrine must not be confused or over-dosage may occur. These forms are epinephrine 1:1000 dilution, which is appropriate for intramuscular administration, and the 1:10,000 dilution, which is for intravenous use for treating anaphylactic shock by doctor's order (Cat. B)
E. There is a very real danger of giving the wrong concentration of epinephrine (1:1000 solution is never given IV) with dangerous and even fatal complications so be very careful that you are using the 1:10,000 concentration if ordered to give epinephrine IV.

CARDIAC ARREST 4.8

SPECIFIC INFORMATION:

A. History: Preceding symptoms, onset, and downtime without CPR.
B. Past History: Diseases, medications, and allergies.
C. Surrounding evidence of drug ingestion, penetrating, or blunt injury.
D. Appropriateness of resuscitative efforts: In unexpected or unwitnessed cardiovascular collapse, proceed with the protocols unless obvious signs of death are present (rigor, etc.). In all others, begin treatment, and then request further information from family members. OLMD may also be of assistance. (See Administrative Protocol 2.1: Death in the Field). Once resuscitative efforts have been initiated, they should be continued until arrival at the receiving hospital, or until a joint decision has been made with Medical Direction or the attending physician, that resuscitation should cease. (See Administrative Protocol 2.1: Death in the Field).

PHYSICAL ASSESSMENT:

A. Determine presence of arrest:
   - Unresponsive.
   - Absent or terminal respiration.
   - Absent pulses over major arteries.
   - Cardiac monitor for initial rhythm.
     REMEMBER TO TREAT THE PATIENT AND NOT THE MONITOR!

B. If signs of penetrating torso injury are present with cardiopulmonary arrest, the patient's only chance for survival is immediate transport.
   - Administer fluids per shock protocol while en route.
   - Ventilate, and transport rapidly to appropriate facility.
   - CHEST COMPRESSIONS ARE NOT INDICATED BEFORE TRANSPORT IN THESE CIRCUMSTANCES IF THIS MEANS A DELAY IN IMMEDIATE TRANSPORT.
   - Once en route, contact OLMD to determine whether to continue resuscitative efforts. (See Administrative Protocol 8.1: Death in the Field).

TREATMENT: ADULT VFIB/PULSELESS VTACH

This sequence was developed to treat a broad range of patients with ventricular fibrillation or pulseless ventricular tachycardia. Some patients may require care not specified herein. This algorithm should not be construed as prohibiting such flexibility. Flow of algorithm presumes that VF/VT is continuing. If for any reason this protocol cannot be followed in treatment order or medication amounts, OLMD must be contacted.

A. ABCs.

B. Perform CPR until monitor/defibrillator is attached or until quick-look paddles are applied.

C. Confirm VF/VT present on monitor.

D. Defibrillate once at 360J.
(If Biphasic Defibrillator – use the manufacturer's recommended setting).

E. Immediately resume CPR without checking pulse or rhythm.

F. Reassess rhythm after five cycles of CPR.

G. Continue CPR if still in VF/Pulseless VT.

H. Intubate as soon as possible – ventilate at 10 breaths per minute with 100% oxygen (do not pause compressions for ventilations).

I. Start a large bore I.V. or IO with normal saline at a TKO rate. If the patient has a venous port you may access it if you are trained and have the proper equipment.

J. Epinephrine (CAT A)- 1 mg, 1:10,000 IV/IO every 3-5 minutes
OR
Vasopressin IV/IO (CAT A) - 40 units, single dose, one time only.
Epinephrine doses may be given every 3-5 minutes after the initial dose of Vasopressin

K. Defibrillate 360J (or recommended Biphasic setting) AFTER EACH DOSE OF MEDICATION.

L. After each defibrillation immediately resume CPR for five cycles before checking rhythm or pulse again.

M. Lidocaine (CAT A)- 1.5 mg/kg, IV/IO.
OR Amiodarone (CAT A)- 300 mg, IV/IO.

N. If persistent, repeat Lidocaine (CAT A)- 0.75mg/kg IV/IO after 5 minutes of first dose.
OR Repeat Amiodarone (CAT A) - 150 mg IV/IO 5 minutes after the first dose.

O. If torsades de pointes consider loading dose of magnesium IV/IO (CAT B) - Mix 2 grams (4 cc) in 250 cc of NS and give IV/IO over 5 minutes.

TREATMENT: ADULT ASYSTOLE & PULSELESS ELECTRICAL ACTIVITY

This sequence was developed to assist treating a broad range of patients in asystole. Some patients may require care not specified herein. This algorithm should not be construed to prohibit such flexibility. The flow of the algorithm presumes asystole is continuing.

A. Continue CPR.
B. Intubate As Soon As Possible – ventilate with 100% oxygen.
C. Start a large bore IV or IO with normal saline at a TKO rate. If the patient has a venous port you may access it if you are trained and have the proper equipment.
D. Confirm asystole in more than one lead.
(If rhythm remains unchanged - TREAT AS ASYSTOLE—DO NOT DEFIBRILLATE)
E. Consider possible causes:

Possible Cause	Treatment
Hypovolemia	Fluid challenge, consider IO for Peds
Hypoxia	Airway, Oxygen, Stop bleeding
Hydrogen ion (acidosis)	Airway
Hypokalemia	Transport
Hyperkalemia (dialysis pt.)	Calcium Gluconate and Sodium Bicarbonate
Hypoglycemia	Glucose
Hypothermia	Warm cover/fluids/environment, transport
Toxins	See Poisoning & Overdose Protocol
Tamponade	Airway, Oxygen, transport
Tension Pneumothorax	Needle Decompression, Oxygen, Transport
Thrombosis	Airway, Oxygen, Transport
Trauma	Airway, Oxygen, SMR, Transport

F. Epinephrine 1 mg, 1:10,000 IV/IO every 3-5 minutes or may give one dose of vasopressin 40 units IV/IO to replace first or second dose of epinephrine.
G. Consider Atropine 1 mg. IV/IO or 2-3 mg ET for continued asystole or pulseless electrical activity (rate less than 60), repeat every 3-5 minutes (Maximum dose 3 mg).
H. Consider Sodium Bicarbonate (CAT A): 1 mEq/kg. Repeat 0.5 mEq/kg q 10min.
I. Consider Calcium Gluconate (CAT A): 1-2 grams (10-20 cc of the 10% solution)

SPECIAL NOTES:

A. **Sodium Bicarbonate** (CAT A) is not recommended for routine cardiac arrest sequence. However, it will probably be helpful and should be used early in cardiac arrest if it is a known tricyclic antidepressant, cocaine, or aspirin overdose or renal failure patient with possible hyperkalemia (high potassium).

B. **Calcium Gluconate** (CAT A) will probably be helpful and should be used early in cardiac arrest if possible hyperkalemia (usually seen in dialysis patients).

TREATMENT: PEDIATRIC VFIB/PULSELESS VTACH
This sequence was developed to treat a broad range of pediatric patients with ventricular fibrillation or pulseless ventricular tachycardia. Some patients may require care not specified herein. This algorithm should not be construed as prohibiting such flexibility. Flow of algorithm presumes that VF/VT is continuing. If for any reason this protocol cannot be followed in treatment order or medication amounts, OLMD must be contacted.

A. ABCs.

B. Perform CPR until monitor/defibrillator is attached or until quick-look paddles are applied.

C. Confirm VF/VT is present on monitor.

D. Defibrillate once at 2J/kg.
(If Biphasic Defibrillator – use the manufacturer's recommended setting)

E. Immediately resume CPR for five cycles without checking pulse or rhythm.

F. Reassess rhythm - if no change in rhythm, immediately continue CPR.

G. Ventilate at appropriate rate with a bag-mask. Intubation is rarely needed.

H. Start a large bore IV, with normal saline at a TKO rate. Consider IO if IV cannot be started. If the patient has a venous port you may access it if you are trained and have the proper equipment.

I. Epinephrine 0.01 mg/kg (0.1 cc/kg) of 1:10,000, IVP or IO.
Repeat at 3-5 minute intervals.

J. Defibrillate 4J/kg (or Biphasic recommendation) AFTER EACH DOSE OF MEDICATION (do 30-60 seconds of CPR to circulate the medication first).

K. Give Lidocaine 1.0 mg/kg, IVP/IO or Amiodarone 5 mg/kg, IVP/IO.

TREATMENT: PEDIATRIC VENTRICULAR ASYSTOLE & PEA
This sequence was developed to assist treating a broad range of patients in asystole and PEA. Some patients may require care not specified herein. This algorithm should not be construed to prohibit such flexibility. The flow of the algorithm presumes asystole is continuing.

A. Continue CPR.

B. Ventilate at appropriate rate with bag-mask. Intubation is rarely needed.

C. Start large bore IV with normal saline at TKO rate. Consider IO if IV cannot be started. If the patient has a venous port you may access it if you are trained and have the proper equipment.

D. Confirm asystole in more than one lead (If rhythm remains unchanged - TREAT AS ASYSTOLE—DO NOT DEFIBRILLATE).

E. Epinephrine 0.01 mg/kg (0.1 cc/kg) of 1:10,000, IVP or IO. Repeat at 3-5 minute intervals.

F. Consider and treat other possible causes:

Possible Cause	Treatment
Hypovolemia	Fluid challenge, consider IO for Peds
Hypoxia	Airway, Oxygen, Stop bleeding
Hydrogen ion (acidosis)	Airway,
Hypo/hyperkalemia	Transport
Hypoglycemia	Glucose
Hypothermia	Warm cover/fluids/environment, transport
Toxins	See Poisoning & Overdose Protocol
Tamponade	Airway, Oxygen, transport
Tension Pneumothorax	Needle Decompression, Oxygen, Transport
Thrombosis	Airway, Oxygen, Transport
Trauma	Airway, Oxygen, SMR, Transport

QUICK REFERENCE TO CARDIAC MEDICATIONS 4.9

NEONATES (AGE: Birth to One Month

MEDICATION	INDICATION	DOSAGE
Atropine (CAT A)	Asystole	0.02 mg/kg (0.1 mg MIN)
Sodium Bicarbonate (CAT A)	Metabolic Acidosis	1 mEq/kg Initial dose(dilute 50% with NS)
Dextrose-25% (CAT A)	Low blood glucose	2-4 cc/kg
Epinephrine (CAT A)	Bradycardia, Cardiac Arrest	0.01mg/kg, 1:10,000 IV, IO O.1 mg/kg 1:1,000 ET
Magnesium sulfate (CAT B)	torsades de pointes	50 mg/kg up to 2 grams total IV over 10 - 20 minutes
Naloxone (CAT A)	Respiratory depression (Narcotic induced)	0.1mg/kg

INFANTS AND CHILDREN (AGE: One month to eight years)

MEDICATION	INDICATION	DOSAGE
Amiodarone (CAT A)	Pulseless VF/VT	5mg/kg IVP/IO
Atropine sulfate (CAT A)	Bradycardia	.02mg/kg (minimum 0.1 mg) MAX single dose 0.5 mg
Dextrose - 25% (CAT A)	Low blood glucose	2-4 cc/kg
Dopamine HC1 (CAT B)	Cardiogenic shock, Low cardiac output	2-20 mcg/kg/min.
Epinephrine (CAT A)	Fine V-fib, low output, cardiac arrest	0.01mg/kg of 1:10,000 IV, IO 0.1 mg/kg of 1:1,000 ET
Lidocaine (CAT A)	Ventricular tachycardia, V-fibrillation	1.0 mg/kg bolus; 20-50 mcg/kg/min drip
Naloxone (CAT A)	Respiratory depression (Narcotic induced)	0.1mg/kg; For >5 years or 20 kg: 2 mg IV,SC,IM, ET
Sodium bicarbonate (CAT A)	Metabolic Acidosis	1 mEq/kg/ initial dose(Dilute 50% with NS)
Magnesium sulfate (CAT B)	torsades de pointes	25mg/kg IV/IO MAX Dose 2 Grams

ADULTS (AGE: Eight years and above)

MEDICATION	INDICATION	DOSAGE
Amiodarone (CAT A)	VFib/Pulseless VTach	300 mg IV Repeat 150 mg in 5 minutes if necessary
Atropine sulfate (CAT A)	Bradycardia	0.5 mg every 3-5 min, 3mg MAX
	Asystole	1 mg. initial, every 3-5 min, 3mg MAX
Calcium Gluconate (CAT A)	Hyperkalemia	1-2 grams IV
Dopamine (CAT B)	Cardiogenic shock	5-20 mcg/kg/min.
Epinephrine (CAT A)	Cardiac arrest	1 mg IVP q 3-5 min. of 1:10,000 IF UNABLE TO GET IV: 2-2.5 mg 1:1,000 with 10 cc sterile water, ET
Lidocaine (CAT A)	VFib/Pulseless VTach	1.5 mg/kg bolus initially then 0.75mg/kg q 5 min. to MAX of 3 mg/kg
Magnesium sulfate (CAT B)	torsades de pointes	2 grams IV over 5 minutes
Sodium bicarbonate (CAT A)	Acidosis	1 mEq/kg initially
	Hyperkalemia	0.5 mEq/kg q10 min.
Vasopressin (CAT A)	Adult shock resistant VFib/Pulseless VTach Adult Asytole/PEA	40 units IVP, one time only. Can replace the first or second dose of Epi.

CARDIAC SYMPTOMS/ACUTE CORONARY SYNDROME 4.10

NOTE: This protocol is for adults. Contact OLMD for suspected cardiac symptoms or chest pain in pediatric patients (age 15 years or less).

SPECIFIC INFORMATION:

A. "Discomfort," pressure, pain: Place, Quality, Radiation, Severity, and Time began (PQRST).
B. Associated symptoms: Nausea, vomiting, diaphoresis, and shortness of breath, usually not pleuritic.
C. Past History: Cardiac or pulmonary events; medications; drug allergies, syncopal episodes.
D. Risk Factors: Determine family history, smoking, obesity, age, and related diseases.

PHYSICAL ASSESSMENT:

A. General appearance.
B. Vital signs should be obtained and recorded not less than every 10 minutes, and after each medication administration and during transport. Symmetry of pulses should be recorded at least once.
C. Observe for neck vein distention and peripheral edema, and if present, suspect Congestive Heart Failure.
D. Breath and chest sounds: rales (crackles), rhonchi, and wheezes. If present suspect Congestive Heart Failure.
E. Chest wall tenderness does not rule out cardiac ischemia.
F. Examine abdomen.

TREATMENT:

A. Reassure and place patient at rest in position of comfort.
B. Airway - maintain patency.
C. Breathing - Oxygen to maintain oxygen saturation (pulse oximeter) reading >95%.
D. Circulation - attach monitoring equipment and treat dysrhythmias per Cardiac Dysrhythmia Protocol. **A 12-lead ECG must be performed on the patient unless the ALS unit has no 12-lead device. The 12-lead ECG should be transmitted to the receiving hospital in advance of patient arrival unless transmission is not possible, in which case the 12-lead ECG should be delivered with the patient.**
E. If vital signs are stable, consider Saline lock IV.
F. If vital signs are unstable, start IV (saline lock or large bore) with normal saline at TKO rate.
G. Consider drawing appropriate tube of blood for hospital or prehospital analysis.
H. Give nitroglycerin 0.4 mg if systolic blood pressure is greater than 90 mm/hg; repeat twice at five-minute intervals if pain persists. Nitroglycerin may be administered by tablet or spray sublingual. The EMT may assist patient in administration of his/her own nitroglycerin.
I. Provide four chewable baby aspirin if the patient can swallow.
   Contraindications to administration of Aspirin:
   - An Allergy to aspirin.
   - Current G.I. Bleeding.
   - Already received 324 mg or more of aspirin (not just 81 mg) in last 24 hours.
J. Consider Morphine Sulfate:
   Adult (CAT A): 4 mg IV initial dose. Titrate to pain relief in 2 mg doses, every 3-5 minutes, up to 10mg MAX.
   Adult (CAT B): If pain is not relieved after 10 mg you must call OLMD for further doses.
K. Consider Nitrous Oxide if available. (CAT B)

L. Consider Lidocaine. (CAT B)
M. If cardiogenic shock syndrome presents in patients with chest pain—go to Shock Protocol (4.27).
N. Continue monitoring cardiac, vitals, etc. and record during transport.
O. Complete the cardiac thrombolytic check list (Forms 10.2) during transport.

SPECIFIC PRECAUTIONS:

A. This protocol is for adults, contact OLMD for suspected cardiac symptoms or chest pain in pediatric patients.

B. Suspicion of cardiac disease causing chest pain or discomfort is based on history obtained. Read monitor rhythm strip for rhythm only; ST segment changes are not reliable.
C. You should have a high index of suspicion for women, diabetics, and all adult medical patients over the age of 50 years who have any symptoms that might be from coronary artery disease.
D. You should perform an ECG on all adults who complain of epigastric discomfort.
E. Since time to thrombolytics is critical, minimize scene times when possible. Most interventions and treatments should be performed en route except the ECG should be done on-scene.
F. Minimize needle sticks if thrombolytic therapy is possible.
G. Lidocaine should NOT be given without OLMD (CAT B). Relative contraindications:
   - Heart rate is less than 50/min, OR
   - Periods of sinus arrest or 2nd or 3rd degree A-V block are present.
H. Morphine Sulfate (CAT A) should be administered slowly. Titrate to effect.
   - May compromise respiration.
   - May cause hypotension in volume depleted patients.
   - May be reversed with naloxone.
I. Nitroglycerin may cause hypotension in patients taking medication for erectile dysfunction.

NOTE:
By June 2013 all ALS services must have the ability to obtain 12-lead ECGs.

CONGESTIVE HEART FAILURE 4.14

SPECIFIC INFORMATION:

A. History: Acute insult or injury? Slow deterioration? Obtain careful history of fever, chills, and purulent sputum products.
B. Past history: Chronic lung or heart problems (diagnosis?), medications or home oxygen?
C. Associated symptoms: Chest pain; paresthesias of mouth or hands.

PHYSICAL ASSESSMENT:

A. Vital signs including pulse oximeter to maintain oxygen saturation >95%.
B. Level of consciousness.
C. Cyanosis.
D. Signs of congestive failure: distended neck veins when upright, wet lung sounds, possible wheezing, possible blood-tinged sputum, and/or peripheral edema.

TREATMENT:

A. Airway - ensure patency.

B. Breathing - Oxygen 12-15 L/M, non-rebreather mask.
- Upright sitting position
- Be prepared to assist ventilations with bag-valve-mask.
- Pulse oximeter, maintain oxygen saturation > 95%.

C. Circulation - cardiac monitor
- Consider 12-lead if available.
- Start IV, Saline lock or large bore, with normal saline at a TKO rate.
- If hemodynamically unstable, utilize Shock Protocol (4.28).

D. If symmetrical crackles present (pulmonary edema):
- Nitroglycerin (CAT A): 0.4 mg sublingual (tablet or spray) if systolic BP is >110.
- CPAP (if no contraindications – see below) (CAT A)
- Furosemide (CAT B): 40 mg IVP.
- Morphine Sulfate (CAT B): 2-4 mg IV slowly. Watch for respiratory depression.

E. If wheezing is present (cardiac asthma):
- Inhalation therapy with Albuterol (CAT B): 2.5mg (nebulized, rotohaler, MDI w/spacer).
- You may assist patient with self administration of prescription bronchodilator.

F. Consider use of CPAP if the following are present:
- Dyspnea/hypoxemia secondary to congestive heart failure or acute cardiogenic pulmonary edema
- Patient is awake and oriented.
- Patient has the ability to maintain an open airway.

G. Contact receiving hospital with patient report as soon as possible during transport.

RESPIRATORY ILLNESS/INFLUENZA 4.26

1. Follow General Patient Care Protocol 4.1.
2. Be sure you are using appropriate standard precautions.
    a. If Dispatch advises you of the potential for acute febrile respiratory illness symptoms on scene, you should don PPE for suspected cases of influenza prior to entering scene (disposable N-95 mask, eye protection [shield or goggles], and disposable non-sterile gloves). Disposable non-sterile gown is optional depending on the situation (follow guidance of service medical director).
    b. If Dispatch has not identified individuals with symptoms of acute febrile respiratory illness on scene, you should stay more than six (6) feet away from patient and bystanders with symptoms and exercise appropriate routine respiratory droplet precautions while assessing all patients for suspected cases of influenza. If patient has signs or symptoms of influenza or acute febrile respiratory illness, you should don the PPE described in a. above before coming into close contact with the patient.
3. Signs and Symptoms of Influenza
    a. Rapid onset of symptoms
    b. Difficulty breathing with exertion
    c. Doctor has already diagnosed influenza
    d. Cough
    e. Fever
    f. Shaking Chills
    g. Pleuritic chest pain
    h. Sore throat (no difficulty breathing or swallowing)
    i. Nasal congestion
    j. Runny nose
    k. Muscle aches
    l. Headache
4. All EMS personnel engaged in aerosol generating activities (e.g. endotracheal intubation, bag-mask ventilation, nebulizer treatment, or CPAP [use expiratory filter]) should wear the PPE described in 2.a.
5. All patients with acute febrile respiratory illness should wear a surgical mask, if tolerated by the patient.
6. Encourage good patient compartment vehicle airflow/ventilation (turn on exhaust fan) to reduce the concentration of aerosol accumulation when possible.

TRANSPORT OF PATIENTS TO HEALTHCARE FACILITIES

When transporting a patient with symptoms of acute febrile respiratory illness, you should notify the receiving healthcare facility so that appropriate infection control precautions may be taken prior to patient arrival. Patients with febrile respiratory illness should wear a surgical mask, if tolerated.

INTERFACILITY TRANSPORT

EMS personnel involved in the transfer of patients with confirmed influenza or suspected infectious respiratory illness should use standard droplet and contact precautions for all patient care activities. This should include wearing disposable N-95 mask, eye protection [shield or goggles], disposable non-sterile gloves and gown. If the transported patient can tolerate a surgical mask, its use can help to minimize the spread of infectious droplets in the patient care compartment. Encourage good patient compartment vehicle airflow/ventilation (turn on exhaust fan) to reduce the concentration of aerosol accumulation when possible. Any nonessential equipment that can be removed from the patient compartment of the ambulance before transport will hasten the time needed to disinfect and return to service.

CLEANING EMS TRANSPORT VEHICLES AFTER TRANSPORTING A SUSPECTED OR CONFIRMED INFLUENZA PATIENT

After the patient has been removed and prior to cleaning, the air within the vehicle may be exhausted by opening the doors and windows of the vehicle while the ventilation system is running. This should be done outdoors and away from pedestrian traffic. Routine cleaning methods should be employed throughout the vehicle and on non-disposable equipment.

Routine cleaning with soap or detergent and water to remove soil and organic matter, followed by the proper use of disinfectants, are the basic components of effective environmental management of influenza. Reducing the number of influenza virus particles on a surface through these steps can reduce the chance of hand transfer of virus particles. Influenza viruses are susceptible to inactivation by a number of chemical disinfectants readily available from consumer and commercial sources.

RESPIRATORY ILLNESS/INFLUENZA MASS CASUALTY EMERGENCY 4.27

This protocol is designed to be implemented only when there is a significant respiratory disease that has impacted the health care system to the extent that hospital beds are full, few or no ventilators are available for new patients with respiratory failure, the EMS/Dispatch work force is significantly depleted due to absenteeism, and the calls for EMS support overwhelm resources to manage all calls. When the Governor proclaims a state of emergency, the Alabama Public Health Department (ADPH) Office of EMS & Trauma (OEMS&T) will activate this protocol to provide authorization for the adjustment in the prehospital standard of care. Depending upon the Governor's proclamation, ADPH OEMS&T may activate this protocol statewide or on a regional or local basis.

ON-SCENE PROTOCOL
PATIENTS WITH ACUTE FEBRILE RESPIRATORY ILLNESS

7. Follow General Patient Care Protocol 4.1.
8. Be sure you are using appropriate standard precautions.
    a. If Dispatch advises you of the potential for acute febrile respiratory illness symptoms on scene, you should don PPE for suspected cases of influenza prior to entering scene (disposable N-95 mask [or surgical mask if N-95 masks are unobtainable], eye protection [shield or goggles], and disposable non-sterile gloves). Disposable non-sterile gown is optional depending on the situation (follow guidance of service medical director).
    b. If Dispatch has not identified individuals with symptoms of acute febrile respiratory illness on scene, you should stay more than six (6) feet away from patient and bystanders with symptoms and exercise appropriate routine respiratory droplet precautions while assessing all patients for suspected cases of influenza (3 below). If patient has signs or symptoms of influenza or acute febrile respiratory illness, you should don the PPE described in a. above before coming into close contact with the patient.
9. Signs and Symptoms of Influenza
    a. Rapid onset of symptoms
    b. Difficulty breathing with exertion
    c. Doctor has already diagnosed influenza
    d. Cough
    e. Fever
    f. Shaking Chills
    g. Pleuritic chest pain
    h. Sore throat (no difficulty breathing or swallowing)
    i. Nasal congestion
    j. Runny nose
    k. Muscle aches

l. Headache

10. If patient has critical vital signs, immediately transport to Emergency Department

a. Critical Vital Signs: Adult

If present, immediately transport to an Emergency Department

i. Pulse: equal or greater than 130 beats per minute
ii. Respiratory Rate: equal or greater than 30 breaths per minute
iii. Systolic Blood Pressure: Less than 90 mm/Hg
iv. Pulse Oximeter: Less than 92 on room air
v. Temperature: Febrile
vi. Level of Consciousness: Responds only to Pain or is Unresponsive
vii. Lung sounds: Rales or Wheezing

b. Critical Vital Signs: Pediatric:

If present, immediately transport to Emergency Department

Vital Signs	Neonates	Infants	Children
Capillary refill:	> 2 seconds	> 2 seconds	> 2 seconds
Resp. rate:	<30 or >45 or increased work of breathing	<20 or >45 or increased work of breathing	<15 or >45 or increased work of breathing
Systolic Blood pressure	< 60 mmHg	< 70 mmHg	Under age 10 < 70 + (2 X age in years)
Pulse Oximeter	< 92 on room air	< 92 on room air	< 92 on room air
Temperature	Febrile	Febrile	Febrile
Level of Consciousness	responds only to pain or is unresponsive	responds only to pain or is unresponsive	responds only to pain or is unresponsive
Lung sounds	Rales or Wheezing	Rales or Wheezing	Rales or Wheezing

11. If patient has "normal" vital signs, then evaluate for signs and symptoms of influenza.

a. "Normal" Vital Signs Adult with respiratory illness

a. Pulse: Less than 130 beats per minute
b. Respiratory Rate: Less than 30 breaths per minute
c. Systolic Blood Pressure: equal or greater than 91 mmHg
d. Pulse Oximeter equal or greater than 92
e. Temperature: Afebrile
f. Level of Consciousness: Alert or responds to verbal stimuli
g. Lung sounds: Clear

b. "Normal" Vital Signs Pediatric Patient with Respiratory Illness

Vital Signs	Neonates	Infants	Children
Capillary refill:	≤ 2 seconds	≤ 2 seconds	≤ 2 seconds
Unlabored breathing or resp. rate:	30-45	20-45	15-45
Systolic Blood pressure	≥ 60 mmHg	≥ 70 mmHg	Under age 10 ≥ 70 + (2 X age in years)
Pulse Oximeter	≥ 92	≥ 92	≥ 92
Temperature	Afebrile	Afebrile	Afebrile
Level of Consciousness	Alert or responds to verbal stimuli	Alert or responds to verbal stimuli	Alert
Lung sounds	Clear	Clear	Clear

12. If patient has three (3) or more signs or symptoms of influenza, transport patient to alternate care facility (if available).
13. If patient has two (2) or fewer signs or symptoms of influenza, call On-line Medical Direction (OLMD) to determine if patient may be left on-scene, self quarantine, and refer to nurse/public health hotline (insert phone number here) for further assistance.
14. Endotracheal intubation should not be performed on any patient except by direct order of the OLMD physician (Cat. B).
15. Because of the danger of EMS personnel becoming infected, aerosol-generating procedures such as advanced airway procedures, use of bag-mask, and nebulizer treatments should not be performed on patients with acute febrile respiratory illness except by direct order of the OLMD physician (Cat. B). CPAP with expiratory filter is still Category A.
16. If OLMD orders advanced airway procedures, use of bag-mask, or nebulizer treatments on a patient with acute febrile respiratory illness, EMS personnel must be in PPE as described in 2.a above.
17. All patients with acute febrile respiratory illness should wear a surgical mask, if tolerated by the patient.
18. Encourage good patient compartment vehicle airflow/ventilation (turn on exhaust fan) to reduce the concentration of aerosol accumulation when possible.

TRANSPORT OF PATIENTS TO HEALTHCARE FACILITIES

When transporting a patient with symptoms of acute febrile respiratory illness, you should notify the receiving healthcare facility so that appropriate infection control precautions may be taken prior to patient arrival. Patients with febrile respiratory illness should wear a surgical mask, if tolerated.

INTERFACILITY TRANSPORT

EMS personnel involved in the transfer of patients with confirmed influenza or suspected infectious respiratory illness should use standard droplet and contact precautions for all patient care activities. This should include wearing disposable N-95 mask, eye protection [shield or goggles], disposable non-sterile gloves and gown. If the transported patient can tolerate a surgical mask, its use can help to minimize the spread of infectious droplets in the patient care compartment. Encourage good patient compartment vehicle airflow/ventilation (turn on exhaust fan) to reduce the concentration of aerosol accumulation when possible. Any nonessential equipment that can be removed from the patient compartment of the ambulance before transport will hasten the time needed to disinfect and return to service.

CLEANING EMS TRANSPORT VEHICLES AFTER TRANSPORTING A SUSPECTED OR CONFIRMED INFLUENZA PATIENT

After the patient has been removed and prior to cleaning, the air within the vehicle may be exhausted by opening the doors and windows of the vehicle while the ventilation system is running. This should be done outdoors and away from pedestrian traffic. Routine cleaning methods should be employed throughout the vehicle and on non-disposable equipment.

Routine cleaning with soap or detergent and water to remove soil and organic matter, followed by the proper use of disinfectants, are the basic components of effective environmental management of influenza. Reducing the number of influenza virus particles on a surface through these steps can reduce the chance of hand transfer of virus particles. Influenza viruses are susceptible to inactivation by a number of chemical disinfectants readily available from consumer and commercial sources.

STROKE 4.30

This protocol is for patients who have an ACUTE episode of neurological deficit without any evidence of trauma. If patient has altered mental status, consider other causes such as hypoxia, hypoperfusion, hypoglycemia, trauma, or overdose.

SPECIFIC INFORMATION NEEDED

A. Last (clock) time patient was seen normal. Determination of time of symptom onset is critical as treatment for stroke can be time dependent.
B. Did the patient have a previous neurologic deficit?
C. Does the patient have stroke risk factors (i.e., hypertension, diabetes, heart disease, smoking, dysrhythmias, coumadin or heparin use, or previous stroke)?
D. Has the patient had any recent similar events?
E. Medic Alert tags?

PHYSICAL ASSESSMENT

A. Vital signs: Glasgow Coma Scale Score.
B. Rapid physical exam

Perform FAST stroke scale (Face, Arm, Speech, Time):

1. **Face:** Assess for facial droop: have the patient show teeth or smile
   - Normal – both sides of face move equally
   - Abnormal – one side of face does not move as well as the other side
2. **Arm**: Assess for arm drift: have the patient close eyes and hold both arms straight out; with palms up, for 10 seconds
   - Normal – both arms move the same *or* both arms do not move at all
   - Abnormal – one arm does not move or one arm drifts down compared to the other
3. **Speech**: Assess for abnormal speech: have the patient say "you can't teach an old dog new tricks"
   - Normal – patient uses correct words with no slurring
   - Abnormal – patient slurs words, uses the wrong words, or is unable to speak
4. **Time**: If any of above are positive, attempt to determine the time of symptom onset (clock time).

NOTE: THERE IS NO SCORE, if 1, 2, or 3 are abnormal, the probability of a stroke is 72%.

TREATMENT:

A. Airway - ensure patency, consider intubation if unconscious patient with no gag reflex.
B. Breathing - Oxygen 12-15 L/M, by non-rebreather mask. Assist ventilations with bag-valve-mask if necessary. Pulse oximeter to maintain oxygen saturation >95%.
C. Circulation - attach cardiac monitor, perform 12 lead ECG if available.
D. Keep patient NPO
E. Glucometer: Adult: <70 administer 25GM D50W IVP (CAT A)
(Give thiamine, 100mg IVP [CAT A] before the D50W if there is any evidence of malnutrition or alcohol abuse).
If the patient is comatose from hypoglycemia and you cannot get an IV line, consider thiamine 100mg IM (CAT A) and glucagon 1mg IM (CAT B).
F. IV or Saline lock with large bore, with normal saline at TKO rate.
A. If patient has no signs of congestive heart failure, give a bolus of 500cc of Normal Saline IV.

B. Place patient supine.
C. Transport with frequent monitoring of neurological function.
D. If possible, bring a knowledgeable friend or family member with the patient.
E. Complete the stroke checklist (Form10.3) on the patient.
F. Contact receiving hospital with patient report as soon as possible during transport.

SPECIAL PRECAUTIONS

A. High blood pressure during an acute stroke may be compensatory, do not attempt to lower it without consulting OLMD.
B. Intravenous glucose may aggravate the effects of ischemia upon brain tissue. Do not administer glucose unless hypoglycemia is documented. Do not fail to treat hypoglycemia.
C. Many patients with stroke are taking diuretics and are volume depleted. Administer one bolus of IV fluid as noted above, unless there are obvious signs of acute heart failure. This may improve cerebral circulation.
D. If in a region with a stroke system, call the ATCC and transport the patient to the appropriate ready stroke center. The ATCC will notify the hospital to activate their stroke team.
E. If in a region without a stroke system, notify the receiving facility that you are bringing a possible stroke patient.

VOMITING AND NAUSEA 4.34

SPECIFIC INFORMATION NEEDED:

A. When did symptoms begin?
B. Is the patient nauseated
C. If vomiting, is the cause known?
D. Has the patient ingested any potential poison or spoiled food?
E. Has there been blood or material like coffee grounds in the vomitus?
F. Has the patient also had diarrhea?
G. If female of child-bearing age, is the patient pregnant?
H. Are there any associated symptoms (such as abdominal pain)?
I. Does the patient have a head injury or severe headache?
J. If headache, is there a history of migraine headaches?
K. Is there a history of vomiting after receiving narcotics?

PHYSICAL ASSESSMENT:

A. Vital signs (are there signs of shock)?
B. Skin: Are there signs of dehydration (poor skin turgor, dry mucous membranes)?
C. Is jaundice present?
D. Head: any sign of head trauma?
E. Abdomen: Tenderness, rebound tenderness, guarding, rigidity, bowel sounds, and distention.
F. Neurologic exam: LOC, pupils, and focal findings?

TREATMENT

ADULT (CAT A): Ondansetron (Zofran) 4 mg IV or IM

PEDIATRIC (CAT B): 1 month to 12 years and <40 kg
Administer Ondansetron (Zofran) 0.1mg/kg IV or IM not to exceed 4 mg

PRECAUTIONS:

A. Can cause allergic reactions
B. Can cause extrapyramidal reactions
C. Must call for order before giving to a child (CAT B)

NOTES:

1. Ondansetron may be used in cases of nausea to prevent vomiting.
2. Ondansetron may be used to prevent nausea when administering morphine, especially if there is a history of vomiting after receiving narcotics.

DIPHENHYDRAMINE 5.10

PHARMACOLOGY AND ACTIONS:

A. An antihistamine which blocks action of histamines released from cells during an allergic reaction.
B. CNS effects, generally sedating in action (CNS depressant) except in children under six years of age in whom it is a CNS stimulant.
C. Anticholinergic, anti-parkinsonism effect, which is used to treat acute extrapyramidal reactions to antipsychotic drugs (e.g., Haldol, Thorazine, Compazine). These reactions include: oculogyric crisis, acute torticollis, and facial grimacing.
D. Antiemetic effect.

INDICATIONS:

A. The second-line medication in anaphylaxis and severe allergic reactions (after epinephrine).
B. To counteract acute extrapyramidal symptoms after receiving antipsychotic drugs.
C. May be used as a secondary medication to treat vomiting.

CONTRAINDICATIONS:

Allergy to Diphenhydramine.
Not for newborns.
Nursing mothers (relative contraindication).

PRECAUTIONS:

A. May have additive effect with alcohol or other CNS depressants.
B. Although useful to treat acute extrapyramidal symptoms it is not an antidote to phenothiazine toxicity or overdose.
C. May cause hypotension when given IV.

ADMINISTRATION (CAT A, CAT B for Pediatric Vomiting):

Allergic Reaction and acute extrapyramidal reactions
Adults (CAT A): 25 to 50 mg. deep IM or slow IV push.
Pediatrics (CAT A): 1 mg/kg IV, IM (not to exceed adult dose).

Vomiting
Adults (CAT A): 25 to 50 mg. deep IM or slow IV push.
Pediatrics (CAT B): 1 mg/kg IV, IM (not to exceed adult dose).

SIDE EFFECTS AND SPECIAL NOTES:

A. Diphenhydramine's antihistaminic reaction is effective in preventing and blocking the effects of histamine some time after its administration. However, since it is not immediately effective in the reversal of anaphylaxis, epinephrine is the medication of choice.
B. Diphenhydramine is the drug of choice in acute extrapyramidal reactions.
C. **May cause excitation in young children.**

EPINEPHRINE 5.12

PHARMACOLOGY AND ACTIONS:
A. Catecholamine with alpha and beta effects.
B. In general, the following increase in cardiovascular responses can be expected: Increased heart rate, myocardial contractile force, systemic vascular resistance, arterial blood pressure, myocardial oxygen consumption, and automaticity.
C. Potent bronchodilator.

INDICATIONS:
A. Cardiac Arrest (VFib, Pulseless VTach, Asystole, Pulseless Electrical Activity)
B. Systemic allergic reactions.
C. Asthma in patients under 40.
D. Pediatric symptomatic Bradycardia

CONTRAINDICATIONS:
The 1:1000 solution is never given IV.

PRECAUTIONS:
A. Epinephrine increases cardiac work and can precipitate angina, myocardial infarction or major dysrhythmias in an individual with ischemic heart disease. A patient with wheezing should not always be considered to have asthma.
B. The cause of wheezing in an elderly person must be differentiated. Wheezing in the elderly is most commonly a sign of conditions which do not required epinephrine such as: pneumonia, pulmonary embolism or pulmonary edema.

ADMINISTRATION (CAT A except CAT B as noted below):
Adult cardiac arrest: 1.0 mg (10 ml of 1:10,000 solution) IV every 3-5 minutes during arrest (If unable to obtain IV or IO line, give 2mg 1:1000 solution via ET with 10cc flush).

Adult allergic reaction (anaphylaxis) (CAT A): 0.3 mg 1:1,000 solution), preferably IM, or equivalent of 1:10,000 solution (3cc) IV (CAT B).

Adult acute asthma (CAT B): 0.3-0.5 mg 1:1000, SQ.

Contact OLMD (CAT B) for patients who are elderly, or have hypertension or coronary artery disease.

Pediatric cardiac arrest (CAT A): 0.01 mg/kg (0.1 ml/kg of 1:10,000) IV/IO every 5 minutes during arrest. (May also be given via endotracheal tube 0.1 mg/kg).

Pediatric symptomatic bradycardia (CAT A): 0.01mg/kg every 5 minutes until heart rate is 80 or more.

Pediatric allergic reaction (anaphylaxis) (CAT A): 0.01 mg/kg to a MAX of 0.3 mg 1:1,000 solution (0.3mg) IM, or equivalent of 1:10,000 solution (MAX 3cc) IV (CAT B).
Pediatric acute asthma (CAT B): 0.01 mg/kg 1:1,000, SQ, MAX of 0.3 mg 1:1000 if under 8 years of age

SIDE EFFECTS AND SPECIAL NOTES:

A. Epinephrine given to a patient may precipitate an acute myocardial infarction.
B. Anxiety, tremor, headache, angina, hypertension.
C. Supraventricular Tachycardia, palpitations, PVCs.
D. Can be administered as patient assisted medication (Epipen).
E. There is a very real danger of giving the wrong concentration of epinephrine (1:1000 solution is never given IV) with dangerous and even fatal complications so be very careful that you are using the 1:10,000 concentration if ordered to give epinephrine IV.

FUROSEMIDE 5.13

PHARMACOLOGY AND ACTIONS:
Potent diuretic with a rapid onset of action and short duration of effect. It acts primarily by inhibiting sodium re-absorption throughout the kidney. Increase in potassium excretion occurs along with the sodium excretion. As an IV bolus, causes immediate (3-4 min) increase in venous capacitance (dilation). This decreases venous backup and probably accounts for its positive effect in pulmonary edema. Peak effect: ½-1 hours after IV administration: duration about 2 hours. (Duration 6-8 hours if given orally, with a peak in 1-2 hours.)

INDICATIONS:
Acute pulmonary edema: To decrease extra cellular volume and reduce venous pressure on the lungs in cardiac failure.

CONTRAINDICATIONS:
A. Contraindicated in hypovolemia or hypotension.
B. Should not be used in children or pregnant women.

PRECAUTIONS:
Monitor closely; can lead to profound diuresis with resultant shock and electrolyte depletion.

ADMINISTRATION (CAT B):
Adults
40 mg IV given slowly over 2 minutes.
May also be given IM.

Pediatric (CAT B):
0.5 – 1mg/kg IV given slowly over 2 minutes

SIDE EFFECTS AND SPECIAL NOTES:
A. Hypovolemia, hypotension, hyponatremia, and hypokalemia are the main toxic effects. Other toxicity is not related to single dose use.
B. The hypokalemia induced is of concern in digitalized patients and particularly those who have digitalis toxicity.

ENDOTRACHEAL INTUBATION 6.5

Use of a bag valve mask and oropharyngeal airway is not considered sufficient to provide and maintain a protected airway except for limited time periods prior to intubation or during medication administration in the altered mental status protocol. Patients who are unconscious, do not have a gag reflex, and need positive pressure ventilation should be intubated by the endotracheal route as soon as indicated.

INDICATION:

- Cardiac arrest with ongoing chest compressions.
- Inability of a conscious patient to ventilate adequately.
- Inability of the patient to protect the airway (coma, loss of gag reflex, or cardiac arrest).
- Inability of the EMT to ventilate the unconscious patients with conventional methods.

CONTRAINDICATIONS:

- Responsive patients with an intact gag reflex.

PRECAUTIONS:

- Adequate ventilation and oxygenation must be provided between attempts.
- Pay careful attention. Improper use or lack of tube placement verification can lead to catastrophic results.
- If the patient regains consciousness, you must remove the ET tube as it will cause retching and vomiting.
- When the patient's position is altered after intubation, it is essential to verify that the tube position remains correct in the new patient position.

PROCEDURE (ORAL-CAT A for Adults, **CAT B for pediatric patients**, NASAL- CAT B for Adults, **Contraindicated for children**):

1. Ventilation by Bag Valve Mask should always precede any attempt at intubation.
2. The maximum interruption of ventilation for endotracheal intubation should be 30 seconds.
3. Insert the endotracheal tube using the correct technique and special precautions for that device.
4. For difficult orotracheal intubations (Adults only) where you cannot see the cords or where the angle is such that it is very difficult to get the tube through the cords, a bougie can be very helpful. Insert the bougie through the cords and then slip the tube over the bougie and slide it down through the cords. Then remove and bougie and verify tube placement.
5. Verification of proper tube placement must be confirmed with Esophageal Detection Device (EDD- suction bulb or syringe) immediately after placing tube. (MANDATORY)
6. Following the EDD, the abdomen should be auscultated first, and then the chest checked for equal bilateral breath sounds and rise.
7. Monitor tube placement with qualitative CO_2 detector or preferably a quantitative waveform CO_2 detector (Use of one or the other is MANDATORY).
   After June 2013 the waveform capnography will be required.
8. Monitor oxygenation with pulse oximeter. Maintain oxygen saturation reading >95%.

9. Ventilation at the appropriate rate as indicated by current AHA guidelines.

NASOTRACHEAL INTUBATION (ADULTS ONLY)

This is a very difficult procedure because it must be done without viewing the pharynx and vocal cords. To be successful you must be able to appreciate the intensity of the breath sounds of spontaneously breathing patients.

INDICATIONS
The nasotracheal route of endotracheal intubation may be indicated when ventilatory assistance is needed but you cannot ventilate successfully with a bag-mask and you cannot open the adult patient's mouth because of clenched jaws.

CONTRAINDICATIONS:
- Apnea
- Suspected epiglottitis
- Age less than 12 years
- Major facial trauma to or instability of the nose or maxilla
- Patients taking warfarin or other anticoagulants
- Patients with known clotting disorders
- Suspected anterior basilar skull fracture (Raccoon Eyes)
- Foreign bodies or polyps in the nares.
- Recent nasal surgery.
- Epistaxis or history of frequent epistaxis.

PRECAUTIONS:
- Adequate ventilation and oxygenation must be provided between attempts.
- Pay careful attention. Improper use or lack of tube placement verification can lead to catastrophic results.
- When the patient's position is altered after intubation, it is essential to verify that the tube position remains correct in the new patient position.
- Quantitative capnography is the best method to monitor placement of the tube.

PROCEDURE (NASOTRACHEAL-CAT B):
1. Ventilation by Bag Valve Mask should always precede any attempt at intubation.
2. The maximum interruption of ventilation for nasotracheal intubation should be 30 seconds.
3. Insert the device using the correct technique and special precautions for that device. Some prefer the Endotrol endotracheal tube for this procedure.
4. Verification of proper tube placement must be confirmed with Esophageal Detection Device (EDD- suction bulb or syringe) immediately after placing tube. (MANDATORY)

5. Following the EDD, the abdomen should be auscultated first, and then the chest checked for equal bilateral breath sounds and rise.
6. Monitor tube placement with the qualitative CO_2 detector or preferably a quantitative waveform CO_2 detector. (Use of one or the other is MANDATORY) After June 2013 the waveform capnography will be required.
7. Monitor oxygenation with pulse oximeter. Maintain oxygen saturation reading >95%.
8. Ventilation at the appropriate rate as indicated by current AHA guidelines.

NOTES:

1. **Children are almost always best ventilated with a bag-mask. It is very rare to need to intubate a child.**
2. **Use of the bougie to facilitate intubation is contraindicated in children.**
3. Remember to deflate cuff prior to repositioning the tube. Movement of the tube with the cuff inflated could result in patient injury or damage to the cuff, requiring a tube change.
4. Once the endotracheal tube is in place, ventilation with the BVM need not be synchronized with chest compressions.
5. Transportation should not be delayed for multiple attempted intubations.
6. By June 2013 all ALS services must have the ability to monitor intubated patients with waveform capnography.

Blind Insertion Airway Devices 9.1

1. Combitube
2. Air-Q Intubating Laryngeal Airway
3. Laryngeal Mask Airway
4. Pharyngotracheal Lumen Airway
5. Rusch EasyTube

NOTE: The King LT-D and LTS-D Airways may be used if your medical director approves