

PROTOCOL

Altered Level of Consciousness

Overview: Altered levels of conscious (ALOC) may vary from minor thought disturbances and confusion to unresponsiveness and unconsciousness. The causes of ALOC include cardiac emergencies, hypoxia, hypoglycemia or diabetic emergencies, epilepsy, alcohol and drug related emergencies, overdoses, trauma, sepsis, stroke or any condition which disrupts brain perfusion. ALOC can be the presenting symptom for many disease processes. Syncope is another type of ALOC and is characterized as an acute, temporary suspension of consciousness. Near-syncope or faintness is a sensation of impending loss of consciousness and may progress to ALOC. A patient who has experienced an ALOC or syncope should receive a thorough evaluation for secondary injuries and possible underlying cause. Although a patient's ALOC or syncope may be resolved in the field, the patient should still be strongly encouraged to accept EMS care, ambulance transport and hospital evaluation for differential etiology. REMEMBER TO CHECK FOR DNR BAND OR MEDICAL ALERT BRACELET.

Emergency Medical Responder Care should be focused on assessing the situation and initiating care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse and begin treating for shock.

1. Render initial care in accordance with the Routine Patient Care Protocol
2. OXYGEN: preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal.
3. Apply nasal/oral airway if indicated.
4. If the patient has a history of diabetes and has in possession a tube of oral glucose, is alert to verbal stimuli, is able to sit in an upright position, and has good airway control and an intact gag reflex: Administer **Oral Glucose** in accordance with the guidelines of the manufacturer's instructions.

BLS Care (Perform blood glucose level test if equipped)

1. Render initial care in accordance with the Routine Patient Care Protocol
2. OXYGEN: preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal.
3. If the patient has a history of diabetes (and/or has a blood glucose level less than 60mg/dl), is alert to verbal stimuli, is able to sit in an upright position, has good airway control and an intact gag reflex: Administer **Oral Glucose** in accordance with the guidelines of the manufacturers' instructions.
4. Administer Glucagon 1 mg IM if Altered LOC

ILS and ALS Care should be directed at conducting a thorough patient assessment, providing care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse, begin treating for shock and preparing or providing patient transportation.

1. Render initial care in accordance with the Routine Patient Care Protocol and BLS care as above. Perform blood glucose level test if equipped. (ILS/ALS may initiate IV line)
2. OXYGEN: preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal.
3. ORAL GLUCOSE:

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- a. If the patient has a history of diabetes (and/or has a blood glucose level less than 60mg/dl), is alert to verbal stimuli, is able to sit in an upright position, has good airway control and an intact gag reflex: Administer Oral Glucose in accordance with the guidelines of the manufacturers' instructions.
4. DEXTROSE or GLUCAGON (ILS/ALS Units):
 - a. Administer **DEXTROSE 50%, 50 cc IVP** if blood glucose level less than 60mg/dl.
 - b. **If unable to establish IV in known diabetic patient, give GLUCAGON (BLS, ILS, ALS) 1 mg IM or IN**
5. NARCAN
 - a. Administer **NARCAN 2mg IVP or IN** if suspect possible narcotic overdose. May be given IM if unable to establish IV/IO.
6. Transport as soon as possible. Transportation can be initiated at any time during this sequence.

Critical Thinking Elements:

- Consider possible C-spine injury. Maintain airway while protecting the cervical spine by using the modified jaw-thrust (without head tilt) maneuver.
- Unless the patient has some other condition that warrants advanced assistances, no ALS intercept is needed if the patient becomes conscious after the administration of glucose
- Identify if Medic Alert tag is present.
- Check and record Vital Signs and Glasgow Coma Scale every 5 minutes.
- If glucose monitoring device is available, a blood glucose level should be obtained before and after the administration of oral glucose, Dextrose or Glucagon.
- **FRLS may assist patient with use of their own glucometer.**
- BLS and ILS may assist the patient with their own glucometer and the administration of Glucagon if documented blood sugar less than 60mg/dl
- If the patient's evaluation or history indicates signs of increased intracranial pressure, possible CVA or head trauma, Medical Control should be contacted prior to administration of DEXTROSE
- Capnography can also be used in cases of altered mental status to assess for hypercapnea.

Suspected CVA (Stroke)

Overview: Cerebrovascular Accident (CVA), commonly known as stroke, is a sudden interruption in blood flow to the brain resulting in neurological deficit. The most common causes of CVA or cerebral thrombosis (a mass obstructing an artery), cerebral embolus (blood clot or air bubble blocking an artery) and cerebral hemorrhage (rupture of an artery). Signs and Symptoms of a CVA include: paralysis of one side of the body (hemiparesis); numbness or decreased sensation without trauma; dizziness, vertigo or syncope; aphasia and slurred speech; confusion, ALOC or convulsions; incontinence. Risk factors that increase the likelihood of suffering a CVA include; hypertension, atherosclerosis, cardiac disease, hyperlipidemia and diabetes. REMEMBER TO CHECK FOR DNR BAND OR MEDICAL ALERT BRACELET.

Emergency Medical Responder / BLS and ILS Care should be focused on assessing the situation and initiating Routine Patient Care. Special attention should be given to protecting the airway and suction as needed.

1. Establish onset of symptoms and perform Cincinnati Stroke Scale (see below).
2. Render initial care in accordance with the Routine Patient Care Protocol (ILS may initiate IV line)
3. Protect paralyzed limbs from injury
4. **OXYGEN 15 L/min by mask.** If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal. Be prepared to support the patient's respiration with ventilation via bag-valve-mask.
5. Check and record Vital Signs and Glasgow Coma Scale every 5 minutes.
6. If transporting unit, initiate transport as soon as possible.

ALS Care should be directed at continuing or establishing BLS/ILS care, conducting a thorough patient assessment and stabilizing the patient's perfusion.

1. Render initial care in accordance with the Routine Patient Care Protocol and BLS care as above. (Initiate IV line and test blood glucose level).
2. If altered mental status, seizure activity or focal neurologic deficit:
3. Give **DEXTROSE 50%, 25-50 cc IVP** if blood glucose level less than 60mg/dl
4. If no response to DEXTROSE, administer **NARCAN 2 mg IVP** if suspect possible narcotic overdose. May be given IM if unable to establish IV.
5. Administer **ATIVAN 1-2 mg IV** every 5 minutes may be used to stop seizure activity, if indicated.
6. Transport as soon as possible. Transportation can be initiated at any time during this sequence. Suspected CVA patients should be transported to the hospital without delay.

Critical Thinking Elements:

- Recent advances in treatment of CVA have resulted in intervention and treatment protocols that are time dependent. Therefore, suspected CVA patients should be transported to the hospital without delay.
- Maintain head/neck in neutral alignment. Do not flex the neck. Elevate head of cot 15 to 30 degrees if the systolic blood pressure is greater than 100mmHg. This will facilitate venous drainage and help reduce ICP.
- Bradycardia may be present in suspected CVA patients due to increased intracranial pressure. ATROPINE is NOT to be given if the BP is normal or elevated. Medical Control should be contacted prior to administration.

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- Close attention should be given to protecting muscular-skeletal functions the patient may not be able to control. Monitor and protect the patient's airway and paralyzed limbs.
- Spinal immobilization should be provided if the patient has possibly suffered a fall or other trauma.
- Signs and Symptoms of increased intracranial pressure include dilated or unequal pupils, increased systolic and diastolic blood pressure, decreased pulse, ALOC.
- Hypoglycemia can mimic signs of stroke. Consider obtaining a blood sugar on all suspected stroke patients.
- Special attention should be given to determining the time of onset of symptoms or establishing when the patient was last seen prior to the onset of symptoms.

The **Cincinnati Prehospital Stroke Scale** is a system used to diagnose the presence of a stroke in a patient. It tests three signs for abnormal findings which may indicate that the patient is having a stroke. If any one of the three tests shows abnormal findings, the patient may be having a stroke and should be transported to a hospital as soon as possible.

1. *Facial droop:* Have the person smile or show his or her teeth. If one side doesn't move as well as the other so it seems to droop, that could be sign of a stroke.
 - Normal: Both sides of face move equally
 - Abnormal: One side of face does not move as well as the other (or at all)
2. *Arm drift:* Have the person close his or her eyes and hold his or her arms straight out in front for about 10 seconds. If one arm does not move, or one arm winds up drifting down more than the other, that could be a sign of a stroke.
 - Normal: Both arms move equally or not at all
 - Abnormal: One arm does not move, or one arm drifts down compared with the other side
3. *Speech:* Have the person say, "You can't teach an old dog new tricks," or some other simple, familiar saying. If the person slurs the words, gets some words wrong, or is unable to speak, that could be sign of stroke.
 - Normal: Patient uses correct words with no slurring
 - Abnormal: Slurred or inappropriate words or mute

Patients with 1 of these 3 findings as a new event have a 72% probability of an ischemic stroke. If all 3 findings are present the probability of an acute stroke is more than 85%

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Seizures / Status Epilepticus

Overview: A seizure is temporary abnormal electrical activity of the brain that results in loss of consciousness with loss of organized muscle tone and convulsions. The patient will usually regain consciousness within 1 to 3 minutes, followed by a period of confusion and fatigue. Seizures lasting more than 5-minutes, or multiple seizures in a brief time span, may constitute status epilepticus and require EMS intervention to stop the seizure. Causes of seizures include; stroke, head trauma, hypoglycemia, hypoxia, infection, rapid change in core body temperature, eclampsia, alcohol withdraw, overdose and epilepsy.

Emergency Medical Responder / BLS and ILS Care should be focused on assessing the situation and initiating Routine Patient Care. Special attention should be given to protecting the patient from injury and maintaining an airway.

1. Render initial care in accordance with the Routine Patient Care Protocol.
2. ILS shall establish IV line.
3. Protect the patient from injury by moving objects and furniture away from the patient. Moderate restraint may be used if necessary.
4. Insert nasal airway if indicated.
5. **OXYGEN 15 L/min by mask.** If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal. Be prepared to support the patient's respiration with ventilation via bag-valve-mask.
6. BLS and ILS should initiate an ALS intercept if the patient had more than one seizure or is still seizing or if seizure has lasted more than 3 minutes.
7. Check and record Vital Signs and Glasgow Coma Scale every 5 minutes.
8. BLS/ILS should attempt a blood sugar. If less than 60mg/dl go to diabetic protocol.
9. Initiate transport as soon as possible.

ALS Care should be directed at continuing or establishing BLS/ILS care, conducting a thorough patient assessment and stabilizing the patient's perfusion.

1. Render initial care in accordance with the Routine Patient Care Protocol and BLS care as above.
2. Initiate IV line and test blood glucose level
3. **DEXTROSE 50%, 50cc IVP** if blood glucose level is less than 60mg/dl
4. NARCAN: Consider **NARCAN 2 mg IVP** for suspected overdose. May be given IM if unable to establish IV.
5. Seizures may be controlled with benzodiazepines: **ATIVAN 1-2mg IVP** or Paramedic only: **Versed 2.5-5mg IVP** every 5 minutes. Important to monitor breathing after medication.
6. Transport as soon as possible. Transportation can be initiated at any time during this sequence.

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Critical Thinking Elements:

- Special attention should be given to the seizure patient's airway. Oral or nasal airways should be inserted if there is any indication the patient is not able to maintain an airway during or after the seizure event. Do not place other items (such as a "bite stick") in the patient's mouth.
- Position the patient in a right lateral position to prevent aspiration unless trauma is suspected.
- Consider possible cervical spine injury if the seizure was suffered in a standing position, was not witnessed or was accompanied by violate contractions.
- Initiate ALS Intercept if seizure activity is not resolved within three minutes or if the patient has no prior history of seizures.
- If the patient history or assessment finding indicates a possible CVA or increased intracranial pressure, or mechanism of injury indicates head trauma, Contact Medical Control prior to administration of DEXTROSE.
- Signs and Symptoms of increased intracranial pressure include dilated or unequal pupils, increased systolic and diastolic blood pressure, decreased pulse, ALOC.
- Mucosal Atomization Device (MAD) often works well in cases of seizure where IV difficult to establish due to excessive movement.

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Hypertension

Overview: A hypertension emergency is an elevation of the blood pressure that may result in organ damage or dysfunction. The organs most likely damaged by a hypertension emergency are the brain, heart and kidneys. Hypertension is also an indication that an underlying condition may exist that is causing the brain to demand more blood from the cardiovascular system.

Hypertension could be an indication of head injury with increased intracranial pressure, hypoxia or endocrine dysfunction. The goal of treatment is a slow, gradual reduction in BP, rather than an abrupt fall that may cause further neurological complications. It is important not to use drug therapy to rapidly lower the blood pressure in chronically hypertensive patients. Hypertensive emergency is defined as a systolic blood pressure >220 mmHg and diastolic blood pressure >120 mmHg with associated symptoms such as chest pain, headache, shortness of breath, etc.

Emergency Medical Responder / BLS and ILS Care should be focused on assessing the situation and initiating Routine Patient Care. Special attention should be given to protecting the airway and suction as needed.

1. Render initial care in accordance with the Routine Patient Care Protocol (ILS may initiate IV line)
2. Maintain head/neck in neutral alignment. Do not flex the neck. Elevate head of cot 15 to 30 degrees.
3. **OXYGEN 15 L/min by mask.** If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal. Be prepared to support the patient's respiration with ventilation via bag-valve-mask.
4. Check and record Vital Signs and Glasgow Coma Scale every 5 minutes.
5. Initiate transport as soon as possible.

ALS Care should be directed at continuing or establishing BLS/ILS care, conducting a thorough patient assessment and stabilizing the patient's perfusion.

1. Render initial care in accordance with the Routine Patient Care Protocol and BLS care as above.(Initiate IV line and test blood glucose level)
2. CONTACT MEDICAL CONTROL AS EARLY AS POSSIBLE.
3. Medications to consider:
 - a. **NITROGLYCERIN 0.4mg SL.** May repeat up to 2 times every 5 minutes
 - b. **LABETOLOL 10mg IVP.** May repeat in 5 minutes. **Paramedic only**
4. If altered mental status, seizure activity or focal neurologic deficit see appropriate protocol.
5. Transport as soon as possible. Transportation can be initiated at any time during this sequence. Suspected CVA patients should be transported to the hospital without delay.

Critical Thinking Elements

- A patient with hypertension should be assessed for underlying causes of hypoxia.
- A patient with a systolic blood pressure greater than 150 and/or diastolic greater than 90 but without neurological deficit should be considered stable.
- A patient with a diastolic BP greater than 130 with non-traumatic neurologic deficits (visual disturbances, seizure activity, paralysis, decreased LOC) and/or signs of chest pain and/or pulmonary edema should be considered an acute hypertensive crisis.
- Assess for chest pain and/or pulmonary edema. If present, treat per appropriate protocol.

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Acute Abdominal Pain

Overview: Abdominal pain may vary from minor discomfort to acute pain. Abdominal pain may indicate inflammation, hemorrhage, perforation, obstruction and/or ischemia of a hollow or solid organ. Correct management of the patient in abdominal pain depends on recognizing the degree of distress the patient is suffering and identifying the possible etiology of the distress. Respiratory pattern and abdominal guarding and “splinting” of the abdominal muscles may be used as indicators in determining the degree of distress.

Emergency Medical Responder Care and BLS (NT) Care should be focused on assessing the situation and initiating Routine Patient Care to treat for shock.

1. Render initial care in accordance with the Routine Patient Care Protocol
2. Allow the patient to remain in a position that is most comfortable. This may be on their side with knees bent.
3. Note nature and amount of vomiting and diarrhea; assure body fluid precautions are followed.
4. **OXYGEN 15 L/min by mask.** If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal. Be prepared to support the patient's respirations with ventilation via bag-valve-mask.

BLS/ILS and ALS Care should be directed at conducting a thorough patient assessment, initiating Routine Patient Care to treat for shock and preparing or providing patient transportation.

1. Render initial care in accordance with the Routine Patient Care Protocol and BLS care as above. (ILS/ALS may initiate IV line)
2. **OXYGEN:** preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal. Be prepared to support the patient's respirations with ventilation via bag-valve-mask.
3. **IV FLUID THERAPY:** (If the patient has an altered level of consciousness or hypotension.)
 - a. Administer a **200-300 cc NORMAL SALINE** fluid bolus
 - b. If no ALOC or Hypotension TKO IV Line
4. Consider use of Fentanyl (Intermediate or Paramedic); or Dilaudid (Paramedic) for pain control if SBP > 90 mmHg.

Critical Thinking Elements

- Consider and assess for cardiac, great vessel rupture (aneurysm) or trauma in addition to GI etiologies
- Assess for leaking or ruptured abdominal aorta aneurysm. Common signs and symptoms may include previous history of artery disease, abdominal distention, pulsating masses, lower extremity mottling, diaphoresis and/or sharp, “tearing” pain between the shoulder blades or abdomen.
- Give special attention to female patients of childbearing years. Acute abdominal pain may indicate ectopic pregnancy.
- Consider possible etiologies and obtain a detailed history and physical assessment:
 - Inflammation = slow onset of discomfort, malaise, anorexia, fever and chills.
 - Hemorrhage = steady pain, pain radiating to shoulders, signs and symptoms of hypovolemia.

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- Perforation = acute onset of severe symptoms, steady pain with fever
- Obstruction =cramping pain, nausea, vomiting, decreased bowel activity, upper quadrant pain.
- Ischemia = acute onset of steady pain, usually no fever is notable.
- Do not allow the patient to eat or drink.

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Allergies / Anaphylactic Reaction

Overview: Allergic reactions can be triggered by virtually any allergen. An allergen is a substance, usually protein-based, which produces a hypersensitive reaction. Drugs (penicillin), blood products, foods (shellfish) and envenomation (insect stings) are examples of substances which may produce hypersensitive reactions. Signs and symptoms of a hypersensitive reaction may range from isolated hives to wheezing, shock and cardiac arrest. Anaphylaxis is a life threatening reaction that requires prompt recognition and intervention. An anaphylactic reaction may result in airway compromise and circulatory collapse within minutes.

Emergency Medical Responder Care should be focused on assessing the situation and initiating care to assure the patient is maintaining an airway, is breathing, and has a perfusing pulse and beginning treatment for shock.

1. Render initial care in accordance with the Routine Patient Care Protocol
2. **OXYGEN:** preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 6 L/min by nasal canal.
3. EPI-PEN:
 - a. If the patient has a history of allergic reactions and has in possession a prescribed EPI-PEN, is suffering hives, wheezing, hoarseness, hypotension, ALOC or signs and symptoms suggest anaphylaxis: administer the **EPI-PEN** in accordance with the Epinephrine Autoinjector Procedure.

BLS/ILS Care should be directed at conducting a thorough patient assessment, providing care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse, begin treating for shock and preparing or providing patient transportation.

1. Render initial care in accordance with the Routine Patient Care Protocol (ILS/ALS initiate IV line)
2. **OXYGEN:** preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 6 L/min by nasal canal.
3. BLS and ILS should initiate an ALS intercept.
4. EPINEPHRINE
 - a. EPI-PEN (BLS/ILS)
 - i. If the patient has a history of allergic reactions and is suffering hives, wheezing, hoarseness, hypotension, ALOC or signs and symptoms suggest anaphylaxis: administer the **EPI-PEN** in accordance with the Epinephrine Autoinjector Procedure.
 - b. EPINEPHRINE Injection (ILS)
 - i. Administer **EPINEPHRINE 1:1000 0.3ml IM**
5. PROVENTIL (ALBUTEROL):
 - a. If respiratory distress is unrelieved by EPI-PEN, Administer nebulizer treatment of **PROVENTIL (ALBUTEROL) 2.5 mg** in 3 ml Normal Saline.
6. IV FLUID THERAPY: (ILS Units)
 - a. If the patient has an altered level of consciousness or hypotension administer a 200-300 ml fluid bolus

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ALS Care (Paramedic only) should be directed at conducting a thorough patient assessment, providing care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse, begin treating for shock and preparing or providing patient transportation.

1. Render initial care in accordance with the Routine Patient Care Protocol and BLS/ILS care as above.
2. If the patient has hives and/or respiratory distress:
 - a. **BENADRYL 50 mg IVP** over 2 - 3 minutes. If unable to initiate IV, BENADRYL may be given IM. **Paramedic only**
3. If the patient has hypotension or respiratory distress (inspiratory and expiratory wheezing, stridor, laryngeal edema):
 - a. EPINEPHRINE:
 - i. **EPINEPHRINE 1:1,000 0.3 - 0.5ml IM.**
 - ii. **EPINEPHRINE 1:10,000 0.3 ml IVP.** Use if patient is unconscious, apneic, or not responding to IM epinephrine.
 - b. **PROVENTIL (ALBUTEROL): 2.5 mg** in 3 cc Normal Saline over 15 minutes. May be used with BVM if clinical situation indicates.
 - c. IV FLUID THERAPY: administer a **200-300 cc NORMAL SALINE** fluid bolus.
4. Contact Medical Control as soon as possible.
5. Transport as soon as possible. Transportation can be initiated at any time during this sequence.

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PROCEDURE
EPINEPHRINE AUTOINJECTOR IN ANAPHYLAXIS

This protocol may be used by properly licensed/certified EMTs and Emergency Medical Responders who are trained in the treatment of anaphylactic shock and affiliated with an approved service. Contact with Medical Control is defined below.

Indications: Patients exhibiting signs and symptoms of severe allergic reaction and complain of severe respiratory distress or exhibit signs and symptoms of shock (hypoperfusion).

1. Anaphylaxis is defined by life-threatening shock or respiratory compromise, or severe symptoms from more than one organ system. Signs and symptoms of allergic reactions such as:
 - a. Decreased Circulation
 - b. Altered mental status, confusion, agitation, unresponsive
 - c. Increased respiratory and heart rate, pale/cyanotic skin, diaphoresis
 - d. Weak or absent peripheral pulses, low blood pressure for age and existing medical conditions
 - e. Respiratory Distress
 - f. Increased respiratory rate. Decreased rate indicates fatigue.
 - g. Accessory muscle use, retractions, tripod position
 - h. Wheezing or decreased breath sounds. Beware of the silent chest.
 - i. Throat or chest tightness, change in voice, hoarseness, stridor, difficulty swallowing
 - j. Swelling of face, lips, mouth
 - k. Gastrointestinal Irritation, usually associated with ingestion
 - l. Forceful vomiting
 - m. Recurrent diarrhea
 - n. Painful intestinal cramping
 - o. Skin
 - p. Rash, hives, swelling, itching
 - q. Pallor and cyanosis with hypoperfusion

Contraindications:

1. Rash, mild swelling or wheezing
2. Medical Control contact recommended for:
 - a. Any patient over the age of 50 or with known cardiovascular disease.
 - b. Pulse >150 in adults or >200 in children
 - c. Hypertension SBP >180 mmHg or DBP >90mmHg

Patient Assessment:

1. Remove offending agent if possible.
2. Administer oxygen, if not already done. Assist ventilation if necessary.
3. Obtain baseline vital signs and SAMPLE history
4. History- May be delayed for treatment of life-threatening condition.
5. Time of onset?
6. Progression of symptoms?
7. Known exposure?
8. Previous exposure or reaction?
9. Interventions already taken? Own autoinjector used?

Administration:

1. Check autoinjector expiration date, dose and medication condition.
2. **A patient's own EpiPen may only be used only on themselves, otherwise utilize the agency's autoinjector.**
3. Adults > 60 pounds: 0.3mg epinephrine 1:1000 solution (EpiPen Adult)

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4. Children <60 pounds: 0.15mg epinephrine 1:2000 solution (EpiPen Jr)
5. Describe procedure to patient and obtain consent if possible
6. Clean or expose lateral thigh if time allows. An autoinjector may be administered through clothing.
7. Grasp autoinjector in dominant hand with black tip pointing downward. Form a fist with thumb protected within grasp and thumb closest to the gray activation cap.
8. Remove gray activation cap
9. Hold autoinjector approximately 2 inches from lateral thigh at 90 degree angle, quickly swing and jab into thigh.
10. Hold firmly in place for 10 seconds
11. Remove and massage area to promote absorption
12. Examine autoinjector black tip, exposed needle indicates successful injection. If needle not visible, repeat administration steps.
13. Dispose of autoinjector in sharps container
14. Record actions and reassess in 2 minutes
15. Transport immediately under continuous monitoring
16. Epinephrine dose may be repeated in 10 minutes for life-threatening conditions, or in 20 minutes if initial treatment effects diminishing per standing orders:

Allergic reaction without Anaphylaxis, or Medical Control authorization not granted:

1. Patient assessment as above
2. Epinephrine not indicated
3. Prepare for transport
4. Apply cold pack to area of bite or local reaction if identified
5. Notify Medical Control of any changes

EMS provider or bystander Epinephrine exposure or digit injection:

1. In the case of accidental Epinephrine injection, proceed immediately to the Emergency Department for evaluation and treatment. Digital injection can result in tissue necrosis.
2. No prehospital treatment has been proven to be beneficial for digital injection

PROTOCOL

Poisoning and Drug Overdose

Overview: Poisoning may occur by ingesting, injecting, inhaling or absorbing a harmful substance or a substance in harmful quantities. Due to the magnitude and multiplicity of agents that are toxic or could be used as toxins, this protocol focuses on a general approach to the patient who has taken an overdose or contacted a toxic agent. The substance container may contain vital information for resuscitation of a poisoned patient. Communication with Medical Control is the best way to obtain rapid and accurate advice on treatment guidelines for specific substances.

Emergency Medical Responder / BLS and ILS Care should be focused on assessing the situation and initiating Routine Patient Care to treat for shock.

1. Render initial care in accordance with the Routine Patient Care Protocol (ILS and ALS may initiate IV line)
2. Perform blood glucose measurement (BLS/ILS). If blood sugar less than 60mg/dl correct as per Altered Level of Consciousness Protocol.
3. If suspect narcotic overdose and clinically indicated administer NARCAN 2mg IV (ILS).
4. Consider possible scene and patient contamination and follow Agency safety procedures.
5. Secure any evidence of substances (i.e., medication bottles, product containers, plants, substance sample, etc.) Bring any suspected containers to the hospital with the patient if the substance and container do not create a contamination threat.
6. Allow the patient to remain in a position that is most comfortable. This may be on their side with knees bent if the patient is experiencing abdominal pain.
7. Note nature and amount of vomiting and diarrhea; assure body fluid precautions are followed.
8. **OXYGEN:** preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal. Be prepared to support the patient's respirations with ventilation via bag-valve-mask.
9. **IV FLUID THERAPY:** (ILS Units). If the patient has an altered level of consciousness or hypotension administer a **200-300 ml NORMAL SALINE fluid bolus**
10. Transport as soon as possible. Transportation can be initiated at any time during this sequence.

ALS Care should be directed at conducting a thorough patient assessment, initiating Routine Cardiac Care to treat for shock and preparing or providing patient transportation.

1. Render initial care in accordance with the Routine Patient Care Protocol and BLS/ILS care as above.
2. Consider possible scene and patient contamination and follow Agency safety procedures.
3. Secure any evidence of substances (i.e., medication bottles, product containers, plants, substance sample, etc.) Bring any suspected containers to the hospital with the patient if the substance and container do not create a contamination threat.
4. Allow the patient to remain in a position that is most comfortable. This may be on their side with knees bent if the patient is experiencing abdominal pain.
5. Note nature and amount of vomiting and diarrhea; assure body fluid precautions are followed.

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6. **OXYGEN:** preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 6 L/min by nasal canal. Be prepared to support the patient's respirations with ventilation via bag-valve-mask.
7. Paramedic only: **SODIUM BICARBONATE:** If the poisoning agent is suspected or known tricyclic antidepressant (i.e. Amitriptyline) overdose consider **SODIUM BICARBONATE 50 ml IVP**
8. Transport as soon as possible. Transportation can be initiated at any time during this sequence.

Critical Thinking Elements

- Intentional overdose patients should not be allowed to refuse treatment and transport.
- DO NOT give a suspected poisoning patient anything by mouth unless approved by Medical Control.
- Caustic substances are those which have strong acid or alkali properties and usually cause intra-oral burns, painful swallowing or burning and painful regurgitation:
 - ▽ Common Acids: Hydrochloric (metal, swimming pool and toilet bowl cleaners), Sulfuric (battery acid), Acetic and Phenol.
 - ▽ Common Alkalies: Lye (washing powders and paint removers), drain pipe cleaners, disk batteries, bleach and ammonia, polishes, dyes, jewelry cleaners.
- Patient with tricyclic antidepressant overdose may initially appear well, but may rapidly develop altered level of consciousness and cardiovascular instability. Tachycardia and widened QRS complexes are generally signs of a life-threatening ingestion.
- Common tricyclic antidepressants include Amitriptyline, Elavil, Doxepin, Impramine, Clomipramine, et al.
- Narcotic, sedative and benzodiazepine overdoses generally do not cause abrupt changes in consciousness. However, in combination with alcohol usage, and in cases of prolonged transport time, the patient may deteriorate significantly en route to the hospital.
- Common benzodiazepines include Diazepam, Valium, Librium, Ativan, Lorazepam, Clonazepam, Xanax, and Restoril.
- Elderly patients with compromised metabolism may be susceptible to accidental overdose due to accumulation of substances in the liver and other body tissue. Consider recent changes in medication patterns in the elderly patient with an altered LOC.
- If stable patient with Mental Health Detention transfer to Holy Family Memorial Emergency Department.

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Poisoning and Drug Overdose

Suspected Beta Blocker or Calcium Channel Blocker Overdose

Overview:

Patients frequently take beta blockers and calcium channel blockers for conditions ranging from cardiac conditions and hypertension, to migraine headaches and certain neurologic conditions. Presentation of an overdose of one of these medications should be strongly suspected in those patients with bradycardia and hypotension refractory to fluid boluses.

Emergency Medical Responder Care should be focused on assessing the situation and initiating care to reassure the patient, reduce the patient's discomfort and begin treating for shock.

1. Render initial care in accordance with Routine Patient Care Protocol
2. **OXYGEN:** preferably at 15 L/min by mask, if the patient does not tolerate mask, then administer 4-6 L by nasal cannula.

BLS/ILS/ALS Care should be directed at conducting a thorough patient assessment, providing care to reassure the patient, reduce discomfort, begin treating for shock, and preparation of the patient for transportation.

1. Render initial care in accordance with the Routine Patient Care Protocol (ILS/ALS may initiate IV line)
2. **OXYGEN:** preferably at 15 L/min by mask, if the patient does not tolerate mask, then administer 4-6 L by nasal cannula.
3. Obtain 12 lead EKG as soon as practical and attach to cardiac monitor and pulse oximeter.
4. Determine medication status of patient (is the patient currently taking a beta blocker (generic names usually end in “-olol,” (i.e., metoprolol, atenolol, carvediolol, etc.) or a calcium channel blocker (i.e., diltiazem, verapamil, amlodipine, nefedipine, etc.)
5. **ILS/ALS ONLY:** Initiate a large bore IV line (2 if possible)
6. Administer **250 – 500 mL bolus of 0.9% NaCl** and monitor for appropriate response. Obtain respiratory rate, pulse, and blood pressure every 5 minutes.
7. **BLS/ILS:** Initiate a **paramedic intercept**.
8. Apply transcutaneous pacing pads per manufacturer instructions.
9. **PARAMEDIC ONLY:** administer **2 - 5 mg of glucagon IV over 3-5 minutes** continuously monitoring heart rate and rhythm. As glucagon can cause nausea, premedication with **Zofran** (ondansetron) should be utilized. **A test dose of 0.1 mg glucagon may be considered prior to administration of full dose to determine if gastrointestinal side effects will occur and if time and patient stability permit.**
10. **PARAMEDIC ONLY:** If a calcium channel blocker overdosed is suspected and there is no response to multiple fluid boluses, administer **10 mL of 10% CALCIUM CHLORIDE over 2-5 minutes IV**, continuously monitoring heart rate and rhythm.

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11. **PARAMEDIC ONLY:** if patient remains hypotensive and bradycardic despite above maneuvers, initiate a **DOPAMINE drip at 2-20 mcg/min IV** after consultation with medical control.
12. Titrate the drip to a heart rate above 60 beats/min and a systolic blood pressure above 100 mmHg.
13. **External Transcutaneous Pacing:** If signs or symptoms of poor perfusion (i.e. acute altered mental status, chest pain, hypotension, or other signs of shock) continue, consider immediate external transcutaneous pacing. Target rate of pacing is 60 – 70 beats-per-minute.
14. Initiate transport to an appropriate facility at any time during the sequence.

PROTOCOL
Organophosphate/cholinergic poisoning

Overview:

Organophosphate use is ubiquitous in agricultural and manufacturing industries, and is used by amateur gardeners with increasing frequency. Patients exposed to organophosphates or other cholinergic-like substances present with the "SLUDGE syndrome." This includes some or all of the following: salivation, lacrimation, urination, defecation, gastrointestinal upset and eye abnormality (miosis). Common cholinergics include pesticides, carbamates and Sarin/VX nerve gas.

Emergency Medical Responder Care should be focused on assessing the situation and initiating care to reassure the patient, reduce the patient's discomfort and begin treating for shock. Personal protective equipment should be worn to decrease rescuer exposure to any toxic agents. Await HazMat personnel if necessary, staying upwind from the area and out of the "hot zone."

1. Render initial care in accordance with Routine Patient Care Protocol
2. Remove contaminated clothing.
3. Irrigate the patient with water (if a source is available) and if the product MSDS indicates use of water is appropriate/will not cause adverse reaction. Body parts should be flushed for a minimum of 2-5 minutes.
4. **OXYGEN:** preferably at 15 L/min by mask, if the patient does not tolerate mask, then administer 4-6 L by nasal cannula.

BLS/ILS/ALS Care should be directed at conducting a thorough patient assessment, providing care to reassure the patient, reduce discomfort, begin treating for shock, and preparation of the patient for transportation.

1. Render initial care in accordance with the Routine Patient Care Protocol (ILS/ALS may initiate IV line)
2. Utilize continuous cardiac, pulse oximetry and blood pressure monitoring.
3. **BLS/ILS/ALS:** Provide **albuterol 2.5 mg and ipratropium 0.5 mg via nebulizer** as necessary per the respiratory distress algorithm.
4. **ILS/ALS** Initiate a large bore IV line (2 if possible)
5. **PARAMEDIC ONLY** administer **atropine 2-3 mg IV/IM every 5 minutes** as necessary to prevent or alleviate symptoms of cholinergic toxicity. Doses after the initial dose require consent of medical control.
6. Administer MARK 1 kits for self preservation as necessary using appropriate protocols.
7. Initiate transport to an appropriate facility, triage, or decontamination location. Assure receiving hospital is aware of patient's contamination status prior to arrival.

PROCEDURE

Renal / Dialysis Patients

DESCRIPTION: A pre-existing vascular access device is an indwelling catheter / device placed into a central vein to provide vascular access for those patients requiring long term intravenous therapy or hemodialysis. The accessing of indwelling catheters may be performed by paramedics only

INDICATIONS: Patients with Indwelling Shunts and Fistulas

PROCEDURE:

1. Types:
 - a. Indwelling catheter / device exiting externally
 - i. Commonly referred to as a "central Line"
 - ii. May be used if indicated
 - b. Internal subcutaneous infusion ports / fistulas
 - i. Commonly referred to as a "shunt"
 - ii. Can not be used by prehospital crews, there are no indications for use
2. Indication for prehospital use:
 - a. Pre-existing vascular access devices should not be routinely used for vascular access
 - b. Only catheters that exit externally may be used
 - c. Vascular access devices requiring penetration of the skin to access shall not be used
3. Indications for use of a pre-existing external catheter are limited to:
 - a. Cardiopulmonary arrest
 - b. Inability to establish a peripheral IV in patients with circulatory shock
4. Precautions:
 - a. Use 10cc syringe or larger when administering medications to prevent excess infusion pressure
 - b. Strictly adhere to aseptic technique when handling an indwelling catheter
 - c. Prevent introduction of air into the indwelling catheter
 - d. Do not remove the injection cap
 - e. Do not allow IV fluid to run dry
 - f. Always expel air from syringes prior to administration
 - g. Should damage occur to the external catheter, immediately clamp the catheter between the skin and undamaged area.
 - h. Do not use an arm with a shunt, fistula or arteriovenous graft to obtain a blood pressure.
 - i. Do not use an arm with a shunt, fistula or arteriovenous graft to establish peripheral IV accesses.
 - j. If shunt tubing is pulled out of the entrance site:
 - k. Apply direct pressure to bleeding site.
 - l. Elevate the affected arm.
5. Transport immediately to the hospital.

Special Considerations:

- Patients with advanced renal disease requiring dialysis have special medical needs that may require specific attention in the pre-hospital setting. These patients are prone to complications such as fluid overload and electrolyte imbalances, especially if they miss a scheduled dialysis. Fluid overload may lead to pulmonary edema and hyperkalemia may lead to dysrhythmia or ventricular fibrillation. Contact Medical Control for direction in the use of sodium bicarbonate.

PROCEDURE

Prehospital Blood Glucose Monitoring

DESCRIPTION: EMS personnel who have been properly trained (BLS, ILS, ALS) may perform blood glucose monitoring test in the prehospital setting to determine a glucose level using the patient's capillary or venous blood. Findings will be recorded on the prehospital care report.

INDICATIONS: Altered level of consciousness (unconscious with unknown etiology, confusion or disorientation), diabetic patients, syncope, seizures or postictal states.

MATERIALS/EQUIPMENT: PPE, glucose meter, test strips, lancet devices or IV equipment, alcohol swabs, high and low control solutions.

PROCEDURE:

1. Prepare all necessary equipment
2. Utilize appropriate BSI precautions
3. Turn the meter on and follow the meter instructions on the LCD screen.
4. Obtain a blood sample.
5. Use a lancet device to obtain a capillary blood droplet or obtain a drop of venous blood from an IV site with a syringe.
6. Apply the drop of blood to the test spot. Make sure the drop of blood completely covers the test spot on the test strip.
7. The meter then counts down and will beep when the results are displayed.
8. Record the results on the Prehospital Care Report.
9. Discard the test strip and disposable supplies in an appropriate biohazard container.
10. Blood glucose levels should be obtained before and within 10 minutes of the administration of oral glucose, Dextrose or Glucagon.
11. Interpretation of results
 - a. The normal range values for blood glucose is 70-110 mg/dl
 - b. For values < 60 mg/dl AND clinical presentation of hypoglycemia, the patient should receive D-50 IVP, oral glucose, or glucagon per appropriate protocol.

Special Considerations:

- Inaccurate test may result from inadequate amount of blood on the test strip, test strip code number not matching meter, expired test strips, dirty area on test strip holder, improper sequence of testing, poor maintenance of meter and quality controls.
- The blood glucose test is used as an assessment tool to aid in the overall evaluation of the patient. Treatment should be based on the clinical presentation of the patient. Patient care decisions based solely on blood glucose levels indicated on the may result in inadequate or inappropriate treatments.
- Established infection control procedures should be followed when performing these tests (gloves at minimum).
- **Personnel and agencies approved to perform blood glucose testing must have prior approval of the EMS Medical Director, and shall be trained by the manufacturer's representative or designated individuals certified to provide the training by the EMS Medical Director.**
- Quality control measures, including high and low controls, will be performed in accordance with the manufacturer's recommendations. At minimum, quality control checks will be conducted weekly and when a new package of test strips is opened or the unit is dropped. These checks should be documented on a log readily available in the ambulance.

PROTOCOL
Respiratory Distress

Overview: Correct management of the patient in respiratory distress depends on recognizing the degree of distress the patient is suffering and identifying the etiology of the distress. Signs and Symptoms of respiratory distress may include shortness of breath, difficulty in verbalization, altered mental status, and diaphoresis, use of accessory muscles, retractions, and respiratory rate less than 8 or greater than 24. Determine etiology of current event and proceed accordingly. **If etiology is questionable and/or your assessment does not provide a clear etiology, consult Medical Control for direction in patient care.** Do not "shot gun" the respiratory distress patient with treatment that may have no clear benefit and/or complicate the patient's condition. REMEMBER TO CHECK FOR DNR OR MEDICAL ALERT BRACELET.

See the following protocols related to this topic:

Basic Airway Control: In General Patient Assessment and Management Section

Advanced Airway Control: In General Patient Assessment and Management Section

Rapid Sequence Intubation: In General Patient Assessment and Management Section

Non-Visualized Airway (Combitube) Placement: In General Patient Assessment and Management Section

Asthma, COPD, and Chronic Bronchitis: In Adult Medical and Respiratory Protocols

Pulmonary Edema: In Adult Medical and Respiratory Protocols

Respiratory Obstruction (Foreign Body): In Adult Medical and Respiratory Protocols

CPAP: In Adult Medical and Respiratory Protocols

PROTOCOL

Asthma, Emphysema or Chronic Bronchitis

Signs and symptoms may include inspiratory and expiratory wheezing, accessory muscle use and retractions.

Emergency Medical Responder Care and BLS, ILS Care should be focused on assessing the situation and initiating care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse and begin treating for shock.

1. Render initial care in accordance with the Routine Patient Care Protocol(ILS/ALS may initiate IV line)
2. **OXYGEN:** preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal.
3. ALBUTEROL:
 - a. **BLS without field medications:**
 - i. If the patient has (in possession) a prescribed inhaler for history of asthma, emphysema or chronic bronchitis and is wheezing, Contact medical control to assist the patient with administration of a metered dose of the inhaler in accordance with the guidelines of the manufacturers instructions.
 - b. **BLS and ILS with field medications:**
 - i. If the patient has history of asthma, emphysema or chronic bronchitis and is wheezing, administer a treatment of **Albuterol / Atrovent mixture nebulized** via 6L of oxygen until medication is gone. **Second and subsequent doses should be Albuterol Only.** If pt is in distress this medication may be given BVM with appropriate adaptor. It may also be given with CPAP using the appropriate adapters.

ALS Care should be directed at conducting a thorough patient assessment, providing care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse, begin treating for shock and preparing or providing patient transportation.

1. Render initial care in accordance with the Routine Patient Care Protocol
2. **OXYGEN 15 L/min by mask.** If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal.
3. If the patient has a history of asthma, emphysema or chronic bronchitis and is wheezing or has absent breath sounds, administer **Albuterol / Atrovent mixture nebulized** until medication is gone. **Second and subsequent doses should be Albuterol Only.** If pt is in distress this medication may be given BVM with appropriate adaptor. It may also be given with CPAP using the appropriate adapters.
4. EPINEPHRINE: (ALS)
 - a. If the patient is suffering status asthmaticus and does not improve with the Albuterol / Atrovent treatment, CONTACT MEDICAL CONTROL for orders to administer **EPINEPHRINE 0.3ml 1:1000 solution IM.** Precaution and special consideration should be given to administering Epinephrine if the patient is 40 years of age or older, has a heart rate greater than 160 or irregular, history of heart disease or hypertension.
5. Consider use of CPAP (see procedure).
6. Transport as soon as possible. Transportation can be initiated at any time during these sequences.

PROTOCOL
Pulmonary Edema

Signs and symptoms may include distended neck veins, pedal edema, rales or “crackling” lung sounds, and orthopnea.

Emergency Medical Responder / BLS and ILS Care should be focused on assessing the situation and initiating care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse and begin treating for shock

1. Render initial care in accordance with the Routine Cardiac Care Protocol (ILS/ALS initiate IV line)
2. **OXYGEN 15 L/min by mask.** If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal.
3. BLS and ILS should initiate an ALS intercept.
4. For those able to administer CPAP consider its use. See CPAP Procedure.
5. Initiate transport as soon as possible.

ALS Care should be directed at conducting a thorough patient assessment, providing care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse, begin treating for shock and preparing or providing patient transportation.

1. Render initial care in accordance with the Routine Cardiac Care Protocol and BLS/ILS care as above.
2. OXYGEN: preferably 15 L/min by mask. If the patient does not tolerate a mask, then administer 4-6 L/min by nasal canal. Pt should be placed on CPAP if conscious enough to hold mask.
3. If clinically indicated place on CPAP per protocol.
4. NITROGLYCERIN: Administer **NITROGLYCERIN 0.4 mg sublingually**, or **NITROGLYCERIN spray 1 metered dose sublingually**, if systolic BP is 90mmHg or above. May repeat every 3 - 5 minutes if systolic BP is 90mmHg or above. For lengthy transports consider use of **Nitroglycerin Paste 1 inch Paramedic Only**
5. Transport as soon as possible. Transportation can be initiated at any time during these sequences.
6. If patient has been started on CPAP continue with medication regimen.
7. If unable to start patient on CPAP the paramedic may begin RSI procedures.

PROCEDURE
Respiratory Obstruction

DESCRIPTION: An airway obstruction is life threatening and must be corrected immediately upon discovery.

INDICATIONS: Any patient who has an obstructed airway not relieved by manual airway maneuvers.

MATERIALS/EQUIPMENT: Basic airway control equipment, Laryngoscope Handle with various blades and forceps

PROCEDURE:

Conscious Patient with Obstructed Airway

1. Encourage patient to cough.
2. If airway is completely obstructed and cough is unsuccessful, perform abdominal thrusts until the obstruction is cleared or the patient is unconscious
3. If partial airway obstruction and patient is able to breath, transport in position of comfort and administer oxygen 15L/min per NRM.

Unconscious Patient

1. Begin CPR with visual look in mouth before respirations.
2. If unable to relieve obstruction, attempt direct extraction via laryngoscope and forceps (ALS)
 - a. Use the laryngoscope (with 2 EMS providers maintaining in-line stabilization if trauma is suspected) examine upper airway for foreign matter and suction as needed.
 - b. Remove any foreign objects with forceps and suction.
 - c. Reestablish open airway and attempt to ventilate.
3. If obstruction is relieved, continue with airway control, ventilations, assessment and care.
4. If unable to relieve obstruction, continue CPR and transport.

Special Considerations:

- Poor abdominal thrust technique, inappropriate airway maneuvers, and/or failure to recognize an obstructed airway will complicate the patient's condition.
- Chest thrust may be used for pregnant females or obese individuals.