Seattle and King County

2019 EMT Patient Care Guidelines

Introduction

These patient care protocols are intended to help you in your job. Additional information and documents are on the EMS training site at: www.emsonline.net. These protocols define best practices for EMT care in Seattle & King County. It is important to realize that adherence to these protocols provides quality care to patients and protects you and your department.

You have a very challenging job - but a very rewarding one. There can be nothing more satisfying than providing help to the wounded, sympathy to the distressed, relief to the anxious, comfort to the frightened, and most importantly therapy and aid to the sick and injured. Your skills and training literally bring life back from the brink of death. We applaud the fine job you do.

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King County BLS Protocols 2019

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ALS Indicators

The following list is offered as a summary guide and is not comprehensive. Nor does it take into account your IOS or the MOI.

Abdominal Pain

- Discomfort or pain or unusual sensations between the navel and jaw if the patient is > or = to 40 y/o and/or has cardiac history
- Severe, unremitting abdominal pain

Breathing

- Respirations >30 min
- Failure to respond to repeated inhalers
- Asthma attack with history of previous intubation
- Audible wheezing not improved with inhaler
- Abnormal respiratory patterns
- Respiratory related with patient in the tripod position

Burns

- Burns with possible airway involvement
- Burns with associated injuries: electrical shock, fracture, major trauma
- Deep partial thickness or full thickness burns to the face/head, genitals, or > 20% TBSA
- Full thickness circumferential burn to extremity (excluding fingers)

Cardiac

- Suspected ACS (see page 18)

CVA

- LAM score of 4 or greater
- Other ALS indicators (Vitals, LOC)

Diabetic

- Diabetic that is unable to swallow
- Diabetic with rapid respirations
- Diabetic that fails to respond to oral glucose
- Suspected ketoacidosis

Hypothermia

- Temperature <95 degrees oral or tympanic

ALS INDICATORS (CONT.)

- Hypothermia with significant co-morbidity (e.g. elderly, illness, circumstances, trauma, alcohol, drugs)

LOC/Neuro

- GCS < or = 12
- Hypoglycemia with decreased LOC
- Abnormal behavior with unstable vitals
- Abnormal behavior associated with possible drug/alcohol overdose or trauma

Pulse / BP / RR

- Hypotension: systolic <90 with appropriate clinical settings
- Sustained tachycardia: >120/ beats per minute in appropriate clinical setting
- Positive posturals (decrease in systolic BP >20 or increase in pulse >20)
- Systolic >200 or diastolic >110 with symptom
- Pregnancy with systolic <90 or >140
- Severe bradycardia: HR <40 in appropriate clinical setting
- RR>30,<8 in appropriate clinical setting

OB/GYN

- Female with severe unremitting pelvic pain
- Excessive vaginal bleeding
- Possible ectopic pregnancy
- Dispatched to birthing center/midwife
- Pregnancy complications: placenta previa, abruptio placenta, diabetes, multiple birth, breech or limb presentation, prolapsed cord, shoulder dystocia, postpartum hemorrhage
- Imminent birth
- Pregnancy 3rd trimester with abdominal trauma
- Pregnancy with significant trauma MOI.

Other

- Use of IM Epi given by EMT or healthcare professional
- Suspected meningitis

ALS Indicators (Cont.)

Sepsis

- Decreased LOC
- Respiratory distress or RR > 30 per minute
- Signs and symptoms of shock

Seizure

- Multiple seizures
- Single seizure >5 minutes or >15 minutes postictal with no LOC improvement
- Pregnant female
- Severe headache
- Seizures associated with concurrent trauma, drugs/alcohol, or hypoglycemia

Shock (inadequate tissue oxygen delivery)

- Hypotension: systolic BP <90
- Tachycardia: sustained >120/beats per min
- Heart rate > Systolic BP
- Unexplained altered mental status
- Poor skin signs: cool, clammy, pale, delayed capillary refill

Trauma

- Falls >2 times the height of the patient
- Thrown >10-15 feet
- Penetrating injury to head, neck, eyes, chest or abdomen (torso)
- Pelvic fx, bilateral femur fx, or multisystem fx
- Femur fx with excessive swelling
- Open fx except hands and feet
- Severe pain with significant MOI
- Any underwater rescue
- Paresis (weakness) or paresthesia (abnormal sensation) due to trauma
- Significant intrusion, ejection, death in same vehicle

ABDOMINAL COMPLAINTS

ALS Indicators

- Signs and symptoms of shock
- Unstable vital signs
- Positive postural changes (see page 102)
- Evidence of ongoing bleeding or open wound
- Severe, unremitting pain

BLS Indicators

- Stable cardiac and respiratory functions
- Stable vital signs

BLS Care

- Request paramedics if indicated.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Position of comfort (Shock Position if hypotensive).
- Prepare to suction patient if vomiting, estimate volume and describe character (color and consistency) of vomitus.
- Reassure patient.
- Monitor vital signs every five minutes.

ALTERED LOC

ALS Indicators

- Decreased LOC
- Respiratory distress or airway compromise
- Signs and symptoms of shock
- Unstable vital signs
- Multiple seizures (status seizure)
- Single seizure longer than five (5) minutes or with more than 15 minutes postictal with no improvement in LOC
- Cyanosis
- Hypoglycemia with decreased LOC
- Seizure in pregnant female
- Seizure with severe headache
- Seizure associated with trauma
- Drug or alcohol related seizures

BLS Indicators

- Adequate respirations
- Transient symptoms including seizure with stable vital signs
- First time or typical seizure pattern for the patient with stable vital signs

BLS Care

- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Protect patient from injury, remove objects from mouth and upper airway, do not restrain patient during seizure, remove hazardous objects near patient.

ALTERED LOC (CONT.)

- Position patient in position of comfort if alert and airway is secure; if not, then use recovery position.
- Perform blood glucometry
- Perform pulse oximetry (see page 104)
- Suspected opioid overdose
- Loosen restrictive clothing
- Retain relevant drug containers and notes for transport with patient

Allergy / Anaphylaxis

ALS Indicators

Allergic trigger plus

- Unstable vital signs
- Signs or symptoms of shock (see page 7)
- Respiratory distress/compromise
- Progressive hives
- Use of Epi 1:1,000 IM by EMT or healthcare professional.

BLS Indicators

- Bite or sting with local reaction or usual reaction to medication or food
- Stable vital signs and respirations
- No anaphylaxis

BLS Care

- Epi 1:1,000 IM for anaphylaxis (see page 12).
- Oxygen as needed.
- Reassure patient.
- Remove stinger by scraping away from puncture site.
- Any patient who receives an Epi 1:1,000 IM (pre or post EMS arrival) should be transported (mode of transport depends on clinical findings and symptoms) and evaluated in a hospital.

ANAPHYLAXIS: EPINEPHRINE

Indications For Use

Anaphylaxis is a severe life threatening allergic reaction. EMTs are authorized to administer Epinephrine 1:1,000 IM if the following conditions are present:

1. Known or suspected trigger (commonly food allergy, insect sting, drug allergy)
2. Plus one or more of the following symptoms must be present:
   a) Respiratory distress including oral swelling;
   b) Hypotension;
   c) Diffuse or progressive hives

If there is doubt or ambiguity about the diagnosis of anaphylaxis, call paramedics or local ED.

Dosages:

- **Adult** (> 30 kg / 66 lbs): 0.3 mg Epi 1:1,000 IM
- **Child** (< 30 kg/ 66 lbs): 0.15 mg Epi 1:1,000 IM

Injection Procedure

Confirm that patient is experiencing anaphylaxis and meets above criteria.

Assist with administration of patient's Epi auto injector if available.

1. Confirm correct medication and check expiration date.
2. Prep patient's skin.
3. Confirm medication is in syringe.
4. Confirm correct dose with partner.
5. Insert needle into medication vial, draw up desired dose and remove all air bubbles from syringe.
6. Insert needle into patient's anterior-lateral mid-thigh at a 90-degree angle to the skin surface. Retract plunger to check for blood.
7. Inject medication.
8. Remove needle and engage needle safety

ANAPHYLAXIS: EPINEPHRINE

device and place needle/syringe into sharps container.

9. Massage injection site for at least 15 seconds.
10. Reassure patient and monitor for response/ side effects and vital signs every 5 minutes.
11. Document: Medication, dose, site, time, vitals before/after, and patient response to therapy.
12. May administer additional dose every 5-15 minutes if symptoms of anaphylaxis persist.

Use of Epinephrine by EMT or healthcare professional is an ALS indicator. Any patient who receives Epinephrine (pre or post EMS arrival) should be transported (mode of transport depends on clinical findings and symptoms) and evaluated in a hospital.

CAUTION
Prior to injection, you must confirm the presence of fluid in the syringe and verify the dosage.

ASTHMA

ALS Indicators

- Decreased LOC
- Extreme anxiety and agitation
- Ashen color, cyanosis
- Failure to respond to repeated inhalers
- History of previous intubation
- Unable to speak normally due to respiratory distress
- Labored respirations, regardless of rate, when found with other indicators
- Audible wheezing not improved with inhalers
- Sustained tachycardia (see page 6).

BLS Indicators

- Responds to self-administered metered-dose inhaler (MDI) or nebulized treatment
- Normal vital signs
- Able to speak normally

BLS Care

- Assist patient with his or her home medications to include MDI or nebulizer.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Reassure patient and urge calmness.
- Obtain pulse oximetry (see page 104).
- Monitor vital signs every five minutes.

Behavioral

ALS Indicators

- Decreased LOC
- Abnormal behavior with unstable vitals
- Abnormal behavior with serious co-morbidity (e.g., trauma, drug or alcohol OD)

BLS Indicators

- Abnormal behavior with stable vital signs

BLS Care

- Secure safety of personnel and patient.
- Provide support, reassurance to patient.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Wound or trauma care if indicated.
- Consider glucometry and pulse oximtery
- Call police if necessary (if patient refuses transport but EMTs feel patient needs further evaluation).
- Use restraints when warranted (see page 95).
- Monitor patient behavior and physiological changes, do not leave patient alone or unobserved.

Incapacitated or impaired patients or patients with mental or behavioral problems should be evaluated in local hospital emergency departments.

CHEST DISCOMFORT

ALS Indicators

- Chest discomfort of suspected myocardial ischemia (angina / MI) - See Code ACS, page 18
- Altered LOC
- Use of nitroglycerin
- Unstable vital signs
- Signs and symptoms of shock (see page 7)
- Discomfort, pain, or unusual sensations between the navel and the jaw if the patient is 40 years old or older **and/or** has a history of heart problems

BLS Indicators

- Apparent non-cardiac or minor traumatic chest pain **if** patient is less than 40 years old and no cardiac history **and** stable vital signs and no associated symptoms
- Stable/normal vital signs

BLS Care

- Request paramedics if indicated.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Assist patient with nitroglycerin if indicated (see page 80).
- Provide aspirin if indicated (see Code ACS page 18).
- Position of comfort.
- Reassure patient.
- Monitor vital signs every 5 minutes.
- Monitor ECG if authorized, record strip.

CHEST DISCOMFORT (CONT.)

Special Instructions For Chest Pain

- **Patients with possible cardiac chest pain require ALS evaluation**
- **Maintain high index of suspicion that atypical chest pain may be cardiac in origin**
- **Elderly patients, women, and persons with diabetes may present with atypical findings such as fatigue, weakness, shortness of breath, or syncope**

See Code ACS page 18

CODE ACS
(ACUTE CORONARY SYNDROME)

Acute coronary syndrome (ACS) requires rapid assessment by EMTs and paramedics and expedited transport to a cath-ready hospital.

This policy applies to all patients presenting with possible ACS and who are initially evaluated by EMTs.

Evaluation for ACS

1. Patient exhibits any of the following signs or symptoms:
   a. Uncomfortable pressure, fullness, squeezing or pain in the center of the chest that lasts more than a few minutes, or goes away and comes back.
   b. Pain that spreads to the shoulders, neck, or arms.
   c. Chest discomfort with lightheadedness, fainting, sweating, nausea, or shortness of breath.

-OR-

2. Patient exhibits any of the **two** following signs or symptoms, when ACS is suspected:
   a. Atypical chest pain, stomach, or abdominal pain. This may include discomfort that can be localized to a point, that is “sharp” in nature, that is reproducible by palpitation, or that is in the “wrong” location (such as the upper abdomen).
   b. Unexplained nausea (without vomiting) or lightheadedness (not vertigo) without chest pain.
   c. Shortness of breath and difficulty breathing (without chest pain).
   d. Unexplained anxiety, sensation of impending doom, weakness, or fatigue.

CODE ACS (CONT.)
(ACUTE CORONARY SYNDROME)

e. Palpitations, cold sweat, or paleness.

Administer Aspirin (Not authorized for Seattle EMTs)

1. Administer one 325 mg aspirin tablet (or four 81 mg baby aspirins) for patients with suspected ACS. Patients may chew or swallow (with a small amount of water) the aspirin(s). Do not use enteric coated aspirin.
2. Be sure that the patient is alert and responsive, meets indications and has no contraindications.

Contraindications For Use

1. Patient is allergic to aspirin.
2. Patient has taken 325 mg aspirin within 60 minutes for this event,
3. Blood pressure SBP>180 or DBP>110.
4. Active or suspected GI bleeding.
5. Suspected simultaneous complicating stroke/CVA

Additional Procedures

1. If the patient has his/her own nitroglycerin and meets the criteria for administration, please assist the patient with nitroglycerin administration.
2. Request paramedics if not already dispatched.
3. Record your actions, including the dosage and the time of administration.
4. Record the time of onset of symptoms. The time of onset should be the time that symptoms began which prompted the patient to call 911.
5. The goal for otal EMS on scene time should be <15 minutes.

COLD-RELATED

ALS Indicators

- Decreased/altered LOC
- Temperature less than 95° F (35°C) oral or tympanic
- Cessation of shivers in a cold patient
- Significant co-morbidities (e.g., elderly, trauma, alcohol, drugs, acute illness)
- Vital sign abnormalities (Shock or RR with an appropriate clinical setting)

BLS Indicators

- Cold exposure with temperature greater than 95° F, normal vital signs and no abnormal LOC
- Frostbite with temperature greater than 95°F, normal vital signs and no abnormal LOC

BLS Care (Hypothermia)

- Remove patient from the cold environment and protect the patient from further heat loss.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Provide high flow oxygen via NRB or bag-valve mask (see page 89).
- Remove wet clothing.
- Position of comfort. If decreased LOC, place in recovery position.
- Warm patient in a warm environment (aid unit.)
- Monitor patient's vital signs, use ECG monitor if authorized, repeat temperature measurements

BLS Care (Hypothermic Cardiac Arrest Or Profound Bradycardia)

- If no pulse is detected after one full minute, begin CPR and apply AED. If breathing normally, assume there is cerebral perfusion. Therefore, "NO" CPR.

COLD-RELATED (CONT.)

- If AED states “Shock Indicated”, follow cardiac arrest protocol.

If pulse is present, withhold CPR regardless of rate or BP.

BLS Care (Frostbite)

- Protect cold-injured part from further injury.
- Remove any constricting or wet clothing or shoes and replace with a dry bulky dressing.
- Splint the affected extremity and do not let the patient walk on or use it.
- Remove constricting jewelry (e.g., rings, watchbands).
- Do not rub or massage injured tissue.
- Transport to an emergency room.

Do not rewarm frozen tissue unless transport time will exceed two hours and it is certain that the thawed tissue will not refreeze. Obtain medical direction prior to initiating rewarming. Rewarming should be done with 100°F - 105°F water. If a thermometer is not available, appropriate temperature can be approximated using EMT’s own bare hand, on which water should feel warm but not hot.

Do not use dry heat; it heats unevenly and may burn frozen tissue. Stop rewarming when the tissue turns red-purple and becomes pliable.

CONGESTIVE HEART FAILURE

Congestive heart failure (CHF) can range from the very mild to very severe (pulmonary edema). Usually patients with congestive heart failure call EMS for worsening shortness of breath and/or worsening fatigue.

ALS Indicators

- Decreased LOC
- Signs and symptoms of shock (see page 7)
- Extreme anxiety and agitation
- Unable to lie flat
- Ashen color or cyanosis
- Unable to speak normally due to respiratory distress
- Respirations greater than 30 per minute
- Labored respirations, regardless of rate

BLS Indicators

- Normal vital signs without respiratory distress
- Able to speak normally

BLS Care

- Provide supplemental oxygen and/or assist ventilation with a BVM as necessary.
- Position patient in position of comfort. Reassure patient and urge calmness.
- Obtain pulse oximetry (see page 104).
- Monitor vital signs every 5 minutes depending on patient's condition.

DIABETIC

ALS Indicators

- Persistently altered LOC
- Absent or depressed gag reflex, as indicated by inability to swallow
- Patient unable to protect airway
- Unstable vital signs
- Rapid respirations
- Signs and symptoms of shock (see page 7)
- Failure to respond to oral glucose unit with continued glucose <60 despite repeated treatment.
- Suspected diabetic ketoacidosis: glucometry reading >400 or “high” with associated symptoms
- Seizures

BLS Indicators

- Normal LOC
- Gag reflex intact, as indicated by swallowing
- Patient can protect airway
- Normal vital signs
- Symptoms of hypoglycemia relieved by oral glucose
- Hyperglycemia with normal vital signs

BLS Care

- Request paramedics if indicated.
- Perform blood glucometry (see page 26).
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- If hypoglycemic and patient is able to swallow, position upright and give oral glucose.

DIABETIC (CONT.)

- If hypoglycemic, and patient is **unable to swallow**, position on side, give oxygen, ventilation and await paramedics.
- Maintain normal body temperature.
- Monitor vital signs in response to sugar.
- Diabetic patients with symptoms of hyperglycemia should be evaluated in an emergency room. Transport decision based on clinical presentation.
  If in doubt whether symptoms are due to hypoglycemia and swallowing ability is intact, position upright and give oral glucose.

Special Instructions For Diabetic Patients

Patients with hypoglycemia who have responded to oral glucose may be left at scene (see page 27). These patients must have a repeat glucose level of 60 mg/dl or higher documented and **after-care instructions** must be left with the patient.

Distinguishing hyperglycemia from hypoglycemia can be difficult without a blood glucose. Recent medical history can help.

History Suggesting Hypoglycemia

- Insufficient food intake
- Excessive insulin dosage
- Normal to excessive activity level
- Rapid onset
- Absent thirst
- Intense hunger
- Headache
- May have seizures

History Suggestion Hyperglycemia

- Recent infection
- Polyphagia (excessive food intake)
- Polydipsia (intense thirst)

DIABETIC (CONT.)

- Polyuria (excessive frequency and amount of urine)
- Vomiting, abdominal pain
- “Flu-like” symptoms, nausea
- Insufficient insulin dosage
- Gradual onset
- Normal activity level

Signs and Symptoms of Diabetic Coma (Hyperglycemia with Ketoacidosis)

- Altered LOC (restless to coma)
- Warm and dry skin
- Hypotension (systolic BP less than 90 mmHg)
- Sustained tachycardia
- Reduced circulation in extremities
- Vomiting
- Sweet, fruity breath
- Kussmaul breathing (deep, rapid breaths)
- High blood glucose
  - Greater than 200 mg/dl (mild hyperglycemia)
  - Greater than 300 mg/dl (moderate hyperglycemia)
  - Greater than 400 mg/dl (severe hyperglycemia)

Signs and Symptoms of Hypoglycemia

Hypoglycemia may be due to excessive insulin or decreased food intake, or increased activity.

- Irritability, confusion, seizures or coma
- Pale, moist skin
- Normal or rapid pulse
- Low blood glucose (usually less than 60 mg/dl) with glucometry

DIABETIC: GLUCOMETRY

Glucometry is an approved protocol but optional by individual departments.

Indications For Use

- Any time an EMT encounters a patient with an altered level of consciousness. This may include patients with the following:
  - Unconsciousness
  - Suspected diabetic-related problem
  - Signs and symptoms of stroke
  - Suspicion of drug or alcohol intoxication
- Any time EMTs feel that the blood sugar level may assist patient care.

Contraindications

None.

Use and application

Perform the testing procedure as outlined in the instructions for your specific device. All reading should be recorded in the medical report form.

Glucometry can be performed in children < 1 year. In this age group, please use a heel stick instead of a finger stick.

Perform blood glucose evaluation **after the ABCs and initial assessment** have been completed. *If a patient is treated with oral glucose you must perform a second glucose level check.*

Patients on oral hypoglycemic agents who are initially found to be hypoglycemic should be strongly advised to be transported for further evaluation by a physician due to the high likelihood of repeated hypoglycemia secondary to long medication half-life.

DIABETIC: GLUCOMETRY

Patients on insulin may be safely left at home when **ALL FOUR** of the following conditions are met:

1. Patient has stable vital signs.
2. Patient is able to eat and drink normally.
3. Patient responds completely as evidence by BOTH:
   - Blood glucose reaches greater than **60 mg/dl**, AND
   - Patient is conscious and alert with appropriate behavior.
4. A responsible person can remain with the patient.

*These patients must receive **after-care instructions** if they are not being transported to the hospital. You must document pre and post treatment glucose and that after-care instructions were given to patient.*

DROWNING

ALS Indicators

- Any underwater rescue
- Altered LOC or Respiratory distress
- Labored breathing
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting
- Temperature less than 95°F
- Significant co-morbidity (e.g., injury, intoxication)

BLS Indicators

Water-related accident including aspiration of water, injury in diving or swimming, with normal CNS function and vital signs

BLS Care

- Request paramedics if indicated.
- Remove the victim from the water; do not become a victim.
- Neutral in-line cervical stabilization during removal from water with spinal mobility restriction if a spine injury is suspected or patient is unresponsive.
- If there is no suspected spinal injury, consider recovery position.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Prepare suction, expect vomiting.
- Warm aid unit and monitor vital signs.

All immersion incidents should be transported to the hospital for further evaluation.

Care For Scuba Diving Accidents

- Request paramedics
- High flow oxygen by NRM and/or BVM as necessary
- Position patient flat (supine) or on side to avoid cerebral edema

EXCITED DELIRIUM

Definition

A state of extreme mental and physiological excitement, characterized by extreme agitation, hyperthermia, hostility, exceptional strength and endurance without apparent fatigue. This condition is usually associated with illicit stimulant drug use and is associated with in-custody deaths.

ALS Indicators

- Extreme agitation, disorientation
- Hyperthermia, diaphoresis, seeking water
- Stripping off of clothing, or no clothing
- Shouting, keening (making animal noises), unintelligible speech
- Eyes wide open, lid lift
- Paranoia, hallucinations, or panic
- Violence toward others
- Unexpected physical strength and stamina
- Insensitivity to pain
- Violence or attraction towards glass, reflection or lights

BLS indicators

No BLS indicators if Excited Delirium is suspected. ALS must evaluate these patients.

BLS Care

- Secure safety of personnel, assure scene safety before proceeding
- Request Police if not already on scene
- Restrain patient as necessary. See use of Restraints page 95.
- Provide supplemental oxygen and/or ventilatory assistance as necessary
- Wound or trauma care as necessary
- Package patient for ALS transport

HEAT-RELATED

ALS Indicators

- Decreased/altered LOC
- Hot, dry skin in the presence of elevated temperature
- Signs of shock (see page 7)
- Positive postural changes

BLS Indicators

- Heat related cramps
- Minor to moderate heat-related complaint with stable vital signs

BLS Care

- Request paramedics if indicated.
- Remove patient from the hot environment and place patient in a cool environment (back of air-conditioned transport vehicle or aid unit with air conditioner running on high).
- Reassure and cool patient.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Loosen or remove clothing.
- Apply cool packs to neck, groin and armpits for the heat-stroke patient.
- Keep skin wet by applying cool water with sponge or wet towels.
- Fan aggressively.
- Place patient in Shock position.
- If patient is responsive and not nauseated, have patient drink water.
- If the patient is vomiting, place in recovery position.
- Monitor patient’s vital signs and temperature if thermometer available (oral or tympanic).

OBSTETRIC

ALS Indicators

- Imminent birth
- Decreased/altered LOC of mother/newborn baby
- Abnormal blood pressure (less than 90 mmHg systolic or greater than 140 mmHg systolic) with neurologic symptoms
- Complications with this pregnancy such as:
  - Placenta previa
  - Abruptio placenta
  - Diabetes
- Excessive vaginal bleeding
- Suspected ectopic pregnancy
- Any abdominal trauma to mother during third trimester
- Trauma with significant MOI
- Known or anticipate delivery of twins or more
- Breech or limb presentation
- Prolapsed cord
- Shoulder dystocia
- Uncontrolled postpartum hemorrhage
- Seizures
- Dispatch to birthing center/midwife

BLS Indicators

- Early pregnancy, pain or bleeding with stable vital signs
- Childbirth has occurred and there are no complications and mother and baby stable

BLS Care

- Request paramedics if indicated.
- Protect patient's dignity.
- Offer reassurance and emotional support.
- Monitor vital signs.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.

OBSTETRIC (CONT.)

- Nothing by mouth.
- Allow patient to choose position of comfort. *Supine hypotension may occur if patient is flat on back. Place patient onto left side to relieve pressure on the vena cava and place pillow between knees for comfort.*

Imminent Delivery Instructions

- Prepare delivery area (out of public view).
- Position mother in semi-reclining position.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Encourage mother to breathe deeply between contractions and push with contractions.
- Prepare OB equipment and don sterile gloves, gowns, and eye protection.
- As baby crowns, support head with gentle pressure to avoid explosive birth.
- If membrane is still intact, rupture with your fingers to allow amniotic fluid to leak out.
- If cord is around the baby's neck, gently slip it over the head. Do not force it!
  If the cord is too tight to slip over the head, apply umbilical cord clamps and cut.
- Allow the mother to push and support the head as it rotates.
  Caution: *Babies are slippery as they exit the birth canal; be careful and alert.*
- After delivery, wait for cord pulsation to cease, then place two clamps on the cord two inches apart and six inches away from the baby. Cut the cord between the clamps.

OBSTETRIC (CONT.)

- Suction the baby's mouth and nostrils **only if** baby is not breathing or is having respiratory distress.
- Dry and inspect the cord for bleeding.
- Wrap baby in warm blanket.
- Place baby on its side to facilitate drainage and place on mother's chest.
- Inform the mother of the baby's sex.
- Note the time of birth, APGAR score, and sex of the baby.

Post Delivery Instructions

- Observe perineum for bleeding.
- *Normally there should be a small to moderate amount of bloody material that will ooze from the vagina.*
- Apply oxygen to the mother as indicated via nasal cannula or nonrebreather mask.
- Do not pull on the umbilical cord.
- The placenta should be delivered spontaneously within 20 minutes.
  If delivered, wrap the placenta in the bag supplied in the OB Kit and send with the mother and baby to the hospital.
- Massage the uterus with moderate firmness on the lower abdomen to stimulate uterine contraction.
- Encourage skin to skin contact and allow mother to start breastfeeding if she desires.
- Monitor vital signs of both mother and infant.
- Maintain body temperature of both patients.
- BLS transport of mother and baby to hospital, if no ALS indicators.

APGAR SCORINGAPGAR SCORING Score at 1 and 5 minutes after birth				
	Clinical Sign	**0 points**	**1 point**	**2 points**
A	Appearance	Blue, pale	Body pink, extremities blue	Completely pink
P	Pulse	Absent	Less than 100/ minute	More than 100/minute
G	Grimace	No response	Grimaces to stimulation	Cries
A	Activity	Limp	Some flexion of extremities	Active motion
R	Respiratory Effort	Absent	Slow, irregular	Strong cry or respirations

OBSTETRIC: GYNECOLOGIC

ALS Indicators

- Decreased/altered LOC
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting
- Sustained tachycardia (see page 6)
- Moderate to severe hypertension (140 mmHg systolic or greater) in a pregnant woman with neurologic symptoms
- Seizures
- Severe, unremitting pelvic pain
- Excessive vaginal bleeding
- Possible ectopic pregnancy

BLS Indicators

- Limited vaginal bleeding with stable vitals
- Pelvic pain or discomfort with stable vitals

BLS Care

- Request paramedics if indicated.
- Protect patient's dignity.
- Offer reassurance and emotional support.
- Monitor vital signs.
- Direct pressure over lacerations.
- Provide supplemental oxygen.
- Obtain focused history.
- Allow patient to choose position of comfort.

PEDS FEVER AND INFECTION

ALS Indicators

- Decreased LOC
- Respiratory distress
- Seizure
  - Respiratory distress or airway compromise
  - Recurrent seizure
  - Prolonged, depressed LOC
- Fever/Infection
  - High index of suspicion for sepsis or meningitis

BLS Indicators

- Febrile seizure (generalized tonic/clonic—see page 37)
- Fever/infection with low index of suspicion

BLS Care

- Use **Pediatric Assessment Triangle**. (Page 110,111)
- Request paramedics if indicated.
- Provide supplemental oxygen and/or
- ventilatory assistance as necessary.
- Monitor vital signs.
- Position of comfort.
- For seizures, place child on side to protect airway.
- May assist caregiver with medication to reduce temperature (e.g., Tylenol [acetaminophen], not aspirin).
- If febrile, remove extra clothes and loosely cover with one layer. Do not allow to chill.

PEDS FEVER AND INFECTION

Special Instructions for Febrile Seizures

Febrile seizures occur in patients 6 months to 5 years of age. They are always generalized tonic/clonic in nature. Any focal seizure is not *a febrile seizure..*

- Patient with a history of a previous febrile seizure, who is now neurologically intact with stable vital signs, and a competent caregiver requests home care, may be left at home with a suggestion to follow-up with a physician.
- First time febrile seizures must be evaluated in an emergency department

RESPIRATORY

ALS Indicators

- Decreased LOC
- Extreme anxiety or agitation
- Tripod positioning
- Suspected anaphylaxis-related
- Unable to speak normally due to resp distress
- Ashen color, cyanosis, retractions
- Failure to respond to usual treatments
- Respirations greater than 30 per minute
- Labored respirations regardless of rate when found with other indicators
- Audible wheezing, rales when found with other indicators
- Use of EMS/healthcare provider Epi 1:1,000 IM
- Sustained tachycardia (see page 6)

BLS Indicators

- Respiratory complaints due to common causes such as a cold, flu, bronchitis
- Respiratory complaints of a chronic but stable nature
- Respiratory complaints with normal vital signs and adequate oxygenation with treatment
- Patent airway

BLS Care

- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Obtain pulse oximetry (see page 104).
- Reassure patient and urge calmness.
- Assist patient with his or her medications.
- Administer Epinephrine if indicated for anaphylaxis (see page 11).
- Monitor vital signs every 5 minutes depending on patient's condition.

SEIZURES

ALS Indicators

- Multiple seizures (status epilepticus)
- Single seizure longer than five (5) minutes or more than 15 minutes postictal with no improvement in LOC
- Seizure due to hypoglycemia
- Seizure due to hypoxia
- Seizure following head trauma
- Drug- or alcohol-associated seizures

BLS Indicators

- History of prior seizures, seizure is similar to prior episodes, and patient is awake

BLS Care

- Seizures that last more than 5 minutes require paramedic care.
- After patient awakens, perform exam to determine if any injuries occurred or if any neurologic abnormalities exist.
- During seizure, position the patient on his/her side.
- During and after seizure, provide oxygen.
- Perform blood glucometry.
- Obtain pulse oximetry after seizure (see page 104).

SEPSIS

Sepsis is an infection that causes a high mortality.

Signs and symptoms of infection include:
- Hot to the touch (an indicator of fever).
- Skin rash
- Cough with thick sputum
- Abnormal breath sounds
- Headache
- Abdominal pain.
- Muscle aches.
- Diarrhea

Signs of sepsis should be suspected if 2 or more of the following signs are present:
- Hot to the touch (fever)
- HR > 90
- RR > 20
- HR > Systolic BP (Shock index)

ALS Indicators

- Request Paramedics for “Sick” appearing patients.
- Decreased LOC
- Airway problems
- Respiratory distress
- Respirations greater than 30 per minute
- Signs and symptoms of shock (see page 7)
- Positive postural vital signs (20 point drop in SBP or 20 beats per minute increase in HR)

BLS indicators
- “Not Sick” patients.
- Conscious and alert
- Stable airway
- Stable vital signs
- No orthostatic changes in vital signs

BLS Care

SEPSIS (CONT.)

- Maintain airway, provide supplemental oxygen as necessary
- Monitor vital signs
- Place patient in position of comfort
- Notify transport agency and/or receiving hospital of possible sepsis patient
- Document findings of infection and possible sepsis

STROKE

ALS Indicators

- Unconsciousness or Decreased LOC
- Severe hypertension: SBP > 200 mmHg or DBP >110 mmHg, with neurologic signs)
- Hypotension or Bradycardia (pulse <50 bpm)
- Seizures
- Severe headache/vomiting
- Uncontrolled airway and respiratory problems
- Progression of stroke symptoms
- Severe stroke signs with LAMS of 4 or 5

BLS Indicators

- Vital signs and condition stable
- Stroke history
- More minor stroke signs with LAMS 3 or less
- Airway patent and secure

BLS Care

- Perform **FAST screen exam**. (see page 44)
- If FAST positive, perform stroke severity assessment using **LAMS exam** (see page 45)
- Determine time of **"Last Known Well" (**Last known well = onset of symptoms if the patient can provide precise time of onset)
- Call paramedics if indicated.
- Activate "Code CVA" if indicated (see page 46)
- Position patient in upright position.
- Manage airway / deliver oxygen/ventilatory assistance as needed.
- Protect paralyzed limbs.
- Monitor vital signs.
- Perform **blood glucometry.**
- Obtain **family phone contact.**
- Record **patient medications** (see list of anticoagulants on the bottom of page 55)

STROKE PLAN

Revascularization by clot dissolving medication (thrombolytics) or by clot removal should be initiated as soon as possible of ischemic cerebrovascular accident (CVA) i.e. a stroke.

Expedite prehospital evaluation and care in suspected stroke so that the patient can receive early revascularization / intervention at the hospital.

Signs/Symptoms of Stroke:

- Numbness or weakness of the face, arm, or leg, especially on one side of the body
- Confusion, trouble speaking, or understanding
- Trouble seeing in one or both eyes
- Trouble walking, dizziness, loss of balance, or coordination
- Severe headache with no known cause

If you suspect stroke, perform a **FAST** exam

EMTs should attempt to limit scene times to fifteen minutes for suspected stroke patients.

STROKE: FAST EXAM

The **FAST** exam is used in the field to detect stroke.

Face	*Ask the patient to show teeth or smile* Normal: Both sides of the face move equally. Abnormal: One side of the face does not move as well as the other or not at all.
Arm	*Ask the patient to close eyes and extend both arms straight out, palms up, for 10 seconds* Normal: Both arms move the same, or both arms do not move at all. Abnormal: One arm drifts down compared to the other.
Speech	*Ask the patient to say "The sky is blue in Seattle"* Normal: The patient says correct words with no slurring of words Abnormal: The patient slurs words, says the wrong words, or is unable to speak
Time	*Determine* the time the patient was last known well

If any of face/arm/speech abnormal, FAST is positive - assess stroke severity using LAMS

STROKE SEVERITY SCORE (SSS)

The stroke severity scale is the LA Motor Scale abbreviates LAMS. The LAMS is used to determine *severity* of a stroke if the FAST is positive.

Scale is 0-5. Patients get points based on abnormal results in 3 categories:

A. Facial Droop:	Absent	0 points
	Present	1 point
B. Arm Drift:	Absent	0 points
	Drifts Down	1 point
	Falls Rapidly	2 points
Grip Strength:	Normal, strong	0 points
	Weak	1 point
	No Grip	2 points

Total = _____
(max. 5 points)

If Stroke Severity Score is 4 or 5, the patient may have a Large Vessel Occlusion (LVO) stroke and requires rapid ALS evaluation and transport for specialized care

Patients with LVO strokes should be transported via ALS to a stroke center capable of endovascular clot retrieval therapy *unless* they have severe, chronic illness that makes them bedbound or dependent on others for basic life activities (e.g. advanced dementia). Those patients should proceed to local hospital, regardless of stroke severity.

STROKE: CODE CVA

If the FAST is positive, “Code CVA” should be called as the patient may be a candidate for thrombolytic therapy (TPA) and/or endovascular clot retrieval.

To be effective, TPA generally should be given within **4.5 hours** of the onset of the stroke (last known well); thus EMS arrival at hospital should generally be **<3.5 hours**. All hospitals in King County are capable of delivering TPA but only some provide emergency endovascular clot retrieval.

For the stable patient not requiring paramedic evaluation, EMTs should expedite transport to the hospital. This requires rapid decision making, patient loading into the aid vehicle, and notification of hospital of a code CVA patient. You may transport code red due to traffic / transport is >15 minutes.

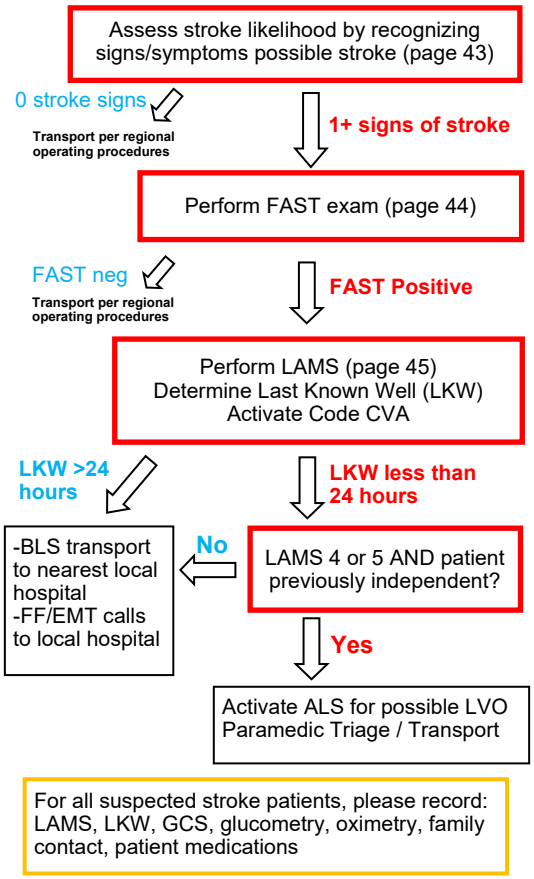
Document stroke-specific information in the narrative

1. Face: Is it symmetrical? YES or NO
   Arm: Symmetrical strength? YES or NO
   Speech: Is it slurred or abnormal? YES or NO
   Time: What time was the patient last known well?
2. LAMS score
3. Glucometry reading.
4. Oximetry
5. Glasgow Coma Scale Score (see page 87)
6. Family phone contact
7. Patient medications (anticoagulants - page 55)
8. Time of hospital notification
9. Time you left the scene enroute to hospital

The following information must be provided to the destination hospital:

- Incoming CVA patient, age, gender
- Time of last known normal (LKW)
- Vital signs and symptoms
- ETA

KING COUNTY STROKE ALGORITHM



BANDAGING AND DRESSING

If a patient's condition and time permits, perform dressing and bandaging of external wounds

- Use body substance isolation (BSI) and PPE.
- Remove community-placed dressings to inspect the wound, unless they are actively soaking through with blood
- Control **active** external bleeding as on page 49
- Secure the dressing with a bandage that is snug but does not impair circulation.
- Large or easily removed debris, such as glass, splinters, or gravel, can be removed; secure large, deeply imbedded fragments or projectiles in place with the bandage.
- If possible, leave patient's fingers or toes exposed.
- Check circulation by feeling for a distal pulse or checking capillary refill.
- Elevate or immobilize the injured extremity, if possible

AMPUTATION

- Wrap amputated parts in sterile dressings and place in a watertight container, and then in a second container.
- Place the container on ice; *Do not submerge the amputated part in water or place directly on ice.*
- Rapid transport of the patient and the severed part is critical to the success of re-implantation. If transport of a patient is delayed, consider sending the amputated part ahead to be surgically prepared.
- Do not use dry ice to cool a severed part. Ice and chemical cold packs are acceptable.

BLEEDING CONTROL

ACTIVE EXTERNAL BLEEDING or HEMORRHAGE

- Apply direct pressure on the open wound with sterile gauze or clean material.
- Apply additional pressure if bleeding continues. A pressure dressing can be used to apply direct pressure.
- If blood soaks through the dressings, add new dressings—do not remove the old dressings.
- If not contraindicated by the injury, elevate the bleeding extremity above the level of the heart.
- A “pressure device” may be used for control of severe, uncontrolled bleeding when all other methods of bleeding control have failed. Military style pressure dressings can be considered.
- When necessary, a properly applied extremity tourniquet may be used (see tourniquet policy page 122)
- Once bleeding is controlled, you may need to immobilize the extremity

EVISERATED ABDOMINAL CONTENTS

- Cover contents with a large multi-trauma dressing wetted with sterile saline (or clean water, if saline unavailable).
- Call for ALS transport

BURNS

ALS Indicators

- Possible airway involvement including singed facial hair, soot in mouth/nose or hoarseness
- Burns with associated injuries: electrical shock, fracture, or respiratory problems
- Deep partial thickness and full thickness burns to the face/head, genitals, or > 20% TBSA
- Full thickness circumferential burn to extremity
- Severe unmanaged pain (request ALS for pain control)

BLS Indicators

- All other burns

BLS Care

- Remove rings if there are burns to extremities

Superficial, partial-thickness burns:

- Cool, moist pads
- Remove easily removed debris first

Deep partial thickness burns:

- Cover with dry dressing (commercial burn sheets are acceptable)
- **DO NOT** apply ointment or creams

Chemical Burns:

- Remove wet chemicals, such as acid, with repeated flushing before dressing.
- Remove dry chemicals by brushing the area first and then flushing
- Then apply occlusive dressing, if available to retain heat and moisture. Secure with tape

Always be alert for possible airway involvement.

EYE INJURIES

ALS Indicators
- Major mechanism of injury
- Penetrating injuries to eye

BLS Indicators
- Minor mechanism of injury
- Eyelid laceration with intact vision
- Ultraviolet burns

BLS Care
- Request paramedics if indicated.
- Stabilize an impaled object in place and bandage both eyes.
- Flush chemical burns to the eyes for 15 minutes with normal saline or water if saline is not available.
- Ultraviolet burns to the eyes: treat with cool compresses over closed eyes.

HEAD AND NECK

ALS Indicators

- Compromised airway
- Abnormal respiratory patterns
- Major mechanism of injury
- Penetrating injury to neck
- Glasgow Coma Scale of 12 or less
- Decreased LOC, unstable vital signs
- Paresis (partial or complete paralysis) and/or paresthesia (abnormal sensation, e.g., tingling)
- Evidence of injury to brain or spinal cord
- Significant alcohol or drug use

BLS Indicators

- Minor mechanism of injury
- Intact airway, stable vital signs
- No evidence of injury to brain or spinal cord
- No significant drug or alcohol use

BLS Care

- Request paramedics if indicated.
- Ensure a patent airway.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Provide neutral, in-line cervical stabilization with proper sized cervical collar and padding. (see Spinal Mobility Restriction, page 112)
- Bandage as necessary.
- Monitor vital signs and neurologic status.

HEAD AND NECK (CONT.)

Special Instructions For Suspected Cervical Injury

- **Suspected cervical injury with non-alignment**
  One attempt to realign neck to the neutral, in-line position unless new pain, additional numbness, tingling or weakness, additional compromise of airway or ventilation or resistance encountered.

  Apply cervical collar and backboard (see page 130). If unable to realign then secure in the original position.

- **Helmet Removal**
  As long as the airway is not affected and remains patent *AND* the c-spine can be secured in a neutral, in-line position, leave football helmets on. Pad the backboard/torso to maintain neutral alignment.

  All other non-fitted helmets may be removed as soon as possible (e.g., bicycle helmets, motorcycle helmets, skateboard helmets, rollerblade helmets).

  If helmet needs to be removed, two EMTs should stabilize head and neck, remove chinstrap, remove helmet while stabilizing head, and apply cervical collar. Secure the patient using spinal mobility restriction (see SMR page 112).

ORTHOPAEDIC

ALS Indicators

- Decreased/altered LOC
- Signs or symptoms of shock (see page 6)
- Excessive uncontrolled bleeding
- Pelvic fracture, bilateral femur fracture, or multi-system injury/fractures
- Femur fracture with excessive swelling
- Open fractures, except for hands and feet
- Abnormal neurovascular exam distal to fracture
- Severe, unremitting pain (ALS for pain control)

BLS Indicators

- Single extremity fracture with stable vital signs
- Single joint injury with stable vital signs

BLS Care

- Request paramedics if indicated.
- Protect spinal mobility restriction if indicated (see SMR page 112)
- Apply direct pressure and sterile dressing over major bleeding.
- Advise nothing by mouth.
- Gently support injured part and allow patient to choose position of comfort.
- Check for nerve function and vascular compromise distal to fracture by documenting circulation, motor function, and sensation/nerve function (“CMS”) before and after splinting.
- Immobilize and splint if indicated (see splinting page 116).
- Apply cold/ice pack to injured part (for closed tissue injury only).
- Monitor patient’s vital signs every 5 minutes.
- Package patient for transport
- Attempt realignment *only* if neurovascular compromise exists
- Pre
-

ORTHOPAEDIC (CONT.)

Realignment of Fractures/Dislocations with Neurovascular Compromise

- Attempt to realign open or closed injuries that are angulated with loss of distal pulses and pale/cool distal skin only if ALS arrival will be delayed by >15 mins
- Realign by applying gentle, in-line, distal traction until pulse returns or increased resistance or excessive pain occurs.
- Splint extremity after realignment
- Realignment may sometimes be necessary to facilitate packaging for transport.
- Always Check and document distal CMS before and after realignment and/or splinting.

Pelvic Fractures (see page 117)

Multiple Extremity Fractures

- These patients should be secured to a backboard which will serve as a general body splint for several sites.

Rapid packaging and transport of the unstable patient or patient with multiple fractures takes priority over definitive splinting at the scene.

Falls In Elderly Patients

In addition to consideration of orthopaedic injuries, consider head trauma and possible CNS bleeding, *especially if the patient is receiving a blood thinners (*including coumadin (Warfarin), enoxaparin (Lovenox), apixiban (Eliquis), rivaroxaban (Xarelto), dabigatran (Pradaxa), edoxaban (Savaysa)). Elderly patients on blood thinners with suspected head injury MUST be evaluated in an emergency department.

SOFT TISSUE

ALS Indicators

- Significant head injury
- Signs and symptoms of shock (see page 7)
- Soft tissue injuries that might compromise the airway
- Excessive uncontrolled bleeding
- Altered LOC
- High index of suspicion based on mechanism of injury

BLS Indicators

- Conscious and alert
- Stable vital signs
- Soft tissue injuries limited to the superficial layer of the skin (epidermis and dermis)
- Single digit amputations (see page 48)
- Soft tissue injuries, with bleeding controlled by direct pressure and/or elevation

BLS Care for OPEN Soft Tissue Injuries

- Request ALS if indicated.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Maintain an open airway.
- Ensure adequate breathing.
- Control bleeding.
- Maintain normal body temperature.
- Monitor vital signs.
- Cervical spine protection, if indicated.

SOFT TISSUE (CONT.)

Special Instructions for OPEN Soft Tissue Injuries

- Control bleeding with direct pressure on the area. Use pressure dressings if needed.
- In uncontrolled serious bleeding of an extremity not responsive to direct pressure, apply a tourniquet to achieve bleeding control.
- Amputation (see page 48)

Removal of Foreign Objects

- Large, easily removed debris, such as glass, splinters, or gravel must be removed before bandaging.
- Large, deeply imbedded fragments or projectiles must be secured in place by the bandage.

Decontamination

- Remove wet chemicals (e.g., acid) by repeated flushing with water.
- Remove dry substances by first brushing the area and then by flushing with water.

Burns

- Easily removed debris should be taken off the burned area, then cover the area with dry, sterile dressings.
- Remove rings for hand burns.
- See Burns, Page 50

AIRWAY MANAGEMENT

OROPHARYNGEAL (OP) AIRWAY

An oropharyngeal airway rests in the patient's oropharynx, lifting the tongue away from the back of the throat preventing it from occluding the airway. The OP airway is used only on unconscious patients and generally those without respirations.

Do not use an OPA if a patient gags when inserted. Use of an airway on a patient with a gag reflex may cause retching, vomiting, or spasm of the vocal cords.

To size an oropharyngeal airway:

- Choose correct size by measuring from the corner of the mouth to the ear lobe or from the chin to the angle of the jaw.
- In infants and children, insert the airway tip down or sideways along with a tongue blade. Rotate down when you are halfway in the mouth or approaching the curve on the tongue.

An oropharangeal (OP) airway is not necessary if ventilation via BVM is easily accomplished.

SUCTIONING

The Yankauer suction tip is preferred for most suctioning. If the holes on the Yankauer get plugged repeatedly, remove the tip and use larger bore tubing.

To suction with a Yankauer tip:

AIRWAY MANAGEMENT

- Do not suction while inserting; suction only after the Yankauer (or similar device) is in place and as you withdraw.
- Suction for no more than 15 seconds at a time.
- *In rare cases, copious vomiting that threatens the airway may require a longer period of suctioning.*
- Oxygenate the patient well before and after suctioning.

BAG-VALVE MASK

Successful ventilation with a BVM requires a good seal between the mask and the patient's face and maintaining an open airway.

Correct ventilation generates only modest chest rise.

To properly place a BVM:

- Choose appropriate size for the patient.
- Place the apex of the mask on the bridge of the nose (between the eyebrows).
- Settle the base of the mask between the lower lip and the prominence of the chin.

TECHNIQUE

- Kneel with a knee on each side of the patient's head.
- Hold the mask firmly in position by placing the heel of the hand on top of the mask, extending the fingers and thumb forward forming a “C”, and grasping the lower jaw with the middle two or three fingers.
- Squeeze the bag to ventilate.
- If available, perform two person bagging with an additional EMT.
- *Each ventilation should take one second and achieve chest rise.*

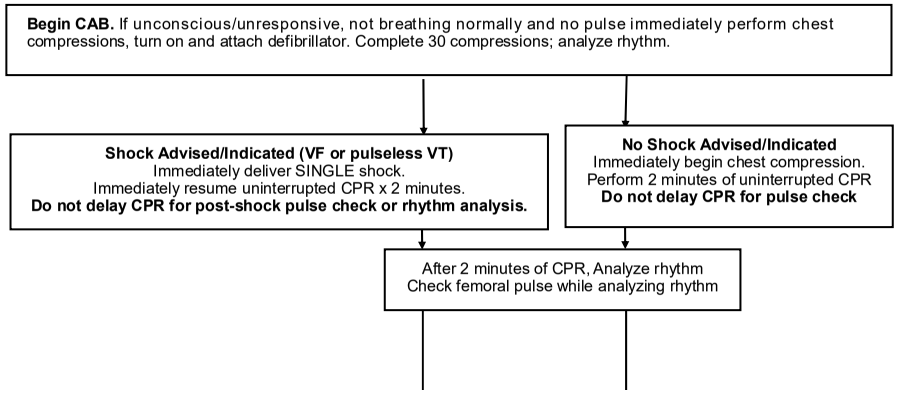
NOTES

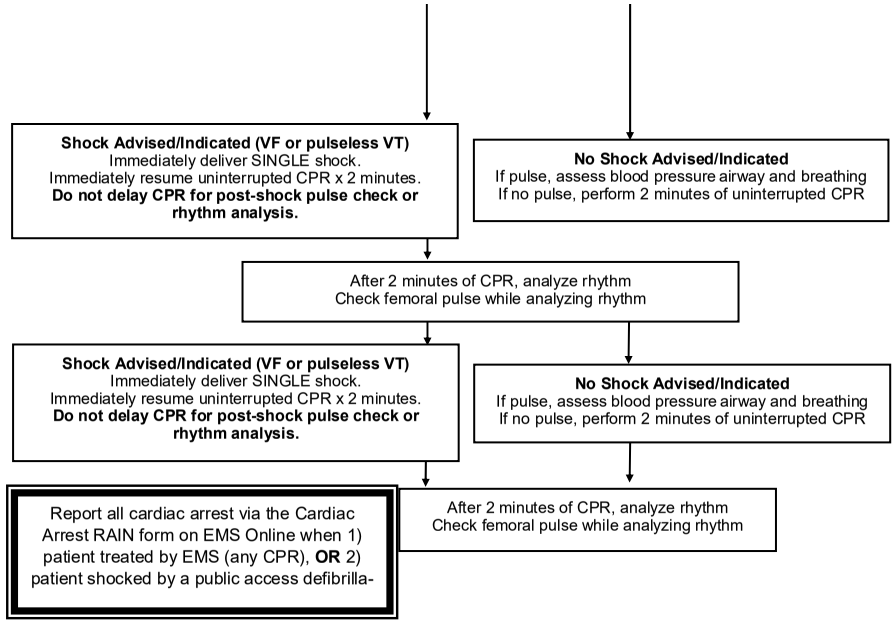
NOTES

KING COUNTY EMERGENCY MEDICAL SERVICES
CARDIAC ARREST IN ADULTS AND CHILDREN ≥ 8 YRS OLD[A]
FOR PHILIPS AED AGENCIES

APPROACH TO CARDIAC ARREST FOR KING COUNTY EMS AGENCIES
(CAB[B]: Chest compressions à Airway à Breathing)

In the patient who is unconscious/unresponsive, not breathing normally and in whom no pulse is detected,[C] immediately perform chest compressions,[D] while turning on and attach defibrillator (AED). Once AED is applied, give verbal report and count compressions. At completion of current set of 30 compressions, analyze rhythm,[E] clear patient and shock if indicated.[F] Resume chest compressions and continue for ~2 minutes before next rhythm analysis.[E, G] Always complete any started cycle of 30 compressions prior to any rhythm analysis and always resume chest compressions immediately after rhythm analysis/shock. Do not create an added pause by ventilating immediately before any rhythm analysis.[E] Palpate femoral pulse (or carotid pulse if femoral pulse is inaccessible) during CPR and particularly prior to and during any pause in CPR.[H]

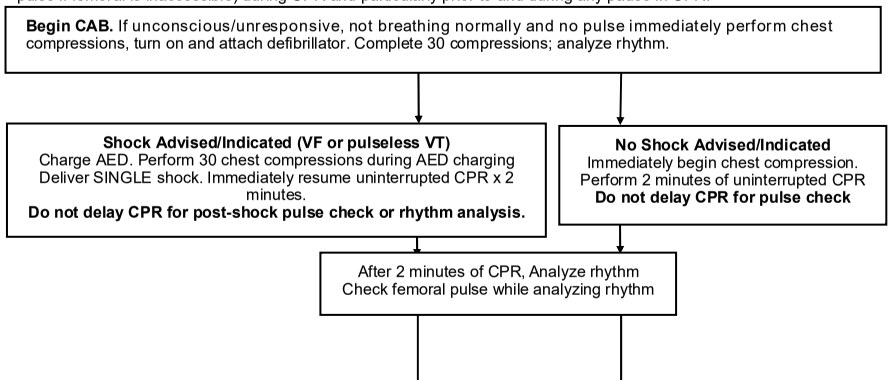


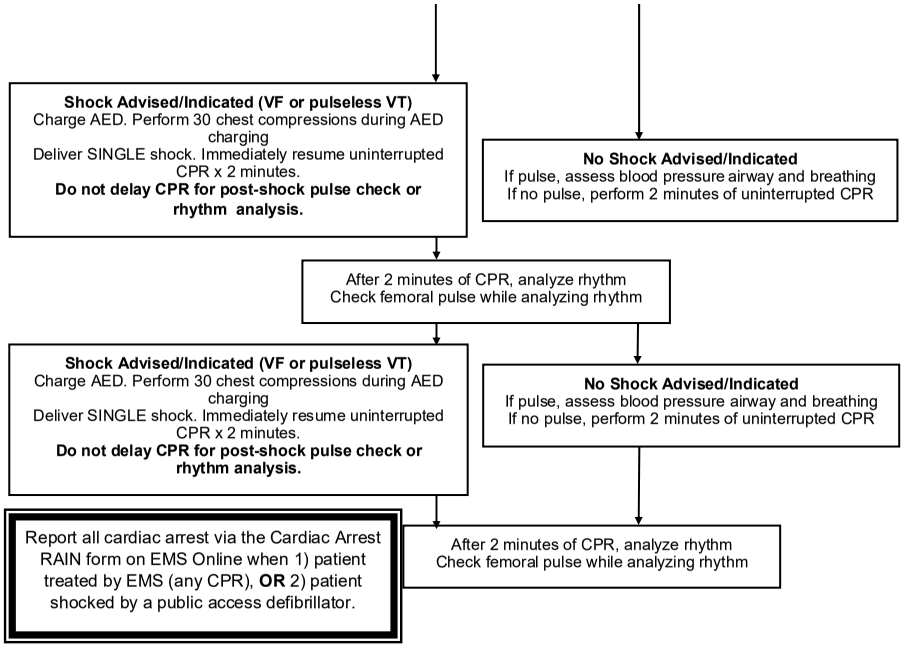

Shock Advised/Indicated (VF or pulseless VT)
Immediately deliver SINGLE shock.
Immediately resume uninterrupted CPR x 2 minutes.
Do not delay CPR for post-shock pulse check or rhythm analysis.
No Shock Advised/Indicated
If pulse, assess blood pressure airway and breathing
If no pulse, perform 2 minutes of uninterrupted CPR
After 2 minutes of CPR, analyze rhythm
Check femoral pulse while analyzing rhythm
Shock Advised/Indicated (VF or pulseless VT)
Immediately deliver SINGLE shock.
Immediately resume uninterrupted CPR x 2 minutes.
Do not delay CPR for post-shock pulse check or rhythm analysis.
No Shock Advised/Indicated
If pulse, assess blood pressure airway and breathing
If no pulse, perform 2 minutes of uninterrupted CPR
Report all cardiac arrest via the Cardiac Arrest RAIN form on EMS Online when 1) patient treated by EMS (any CPR), OR 2) patient shocked by a public access defibrilla-
After 2 minutes of CPR, analyze rhythm
Check femoral pulse while analyzing rhythm

KING COUNTY EMERGENCY MEDICAL SERVICES
CARDIAC ARREST IN ADULTS AND CHILDREN ≥ 8 YRS OLD[A]
FOR PHYSIO-CONTROL AED AGENCIES

APPROACH TO CARDIAC ARREST FOR KING COUNTY EMS AGENCIES
(CAB[B]: Chest compressions à Airway à Breathing)

In the patient who is unconscious/unresponsive, not breathing normally and in whom no pulse is detected,[C] immediately perform chest compressions,[D] while turning on and attach defibrillator (AED). Once AED is applied, give verbal report and count compressions. At completion of current set of 30 compressions, analyze rhythm.[E] If shock is advised/indicated perform 30 chest compressions while AED is charging, clear patient, and shock.[F] Resume chest compressions and continue for ~2 minutes before next rhythm analysis.[E,G] Always complete any started cycle of 30 compressions prior to any rhythm analysis and always resume chest compressions immediately after rhythm analysis/shock. Do not create an added pause by ventilating immediately before any rhythm analysis.[E] When possible palpate femoral pulse (or carotid pulse if femoral is inaccessible) during CPR and particularly prior to and during any pause in CPR.[H]




Shock Advised/Indicated (VF or pulseless VT)
Charge AED. Perform 30 chest compressions during AED charging
Deliver SINGLE shock. Immediately resume uninterrupted CPR x 2 minutes.
Do not delay CPR for post-shock pulse check or rhythm analysis.
No Shock Advised/Indicated
If pulse, assess blood pressure airway and breathing
If no pulse, perform 2 minutes of uninterrupted CPR
After 2 minutes of CPR, analyze rhythm
Check femoral pulse while analyzing rhythm
Shock Advised/Indicated (VF or pulseless VT)
Charge AED. Perform 30 chest compressions during AED charging
Deliver SINGLE shock. Immediately resume uninterrupted CPR x 2 minutes.
Do not delay CPR for post-shock pulse check or rhythm analysis.
No Shock Advised/Indicated
If pulse, assess blood pressure airway and breathing
If no pulse, perform 2 minutes of uninterrupted CPR
Report all cardiac arrest via the Cardiac Arrest RAIN form on EMS Online when 1) patient treated by EMS (any CPR), OR 2) patient shocked by a public access defibrillator.
After 2 minutes of CPR, analyze rhythm
Check femoral pulse while analyzing rhythm

CARDIAC ARREST (CONT.)

A. If age is not known, the presence of secondary sexual characteristics (development of axillary hair in males and breast tissue in females) define a child who has reached puberty and who should be treated as an "adult". In ages < 8yrs (see below) continue uninterrupted CPR until medics arrive. If a public access defibrillator (PAD) is attached prior to your arrival, you may use it.

B. CAB refers to "Chest compressions followed by Airway followed by Breathing" sequence of interventions.

C. If no pulse felt within 10 seconds, begin chest compressions. Count out loud for chest compressions.

D. Each CPR cycle (including the very first) begins with chest compression (at 100-120/min, ≥ 2 inches, with full recoil. Except in obvious cases of asphyxia (e.g. known drowning victim), opening the airway and ventilation (2 breaths) are not performed until completion of the first 30 chest compressions or after rhythm analysis.

E. To minimize the hands off (no chest compression) interval before a rhythm analysis/shock, complete 30 chest compressions, but do not create an added pause by ventilating (or checking pulse) just before rhythm analysis.

F. **Philips AEDs**: MRx, ForeRunner AEDs charge simultaneously while analyzing rhythm (unless the "Pause (for CPR)" soft key is pressed). If a shock is advised during analysis, proceed to immediate shock, then resume CPR.

Physio Control AEDs: If shock is advised, resume CPR for 30 compressions while AED is charging. Then pause CPR briefly for shock, and immediately resume CPR thereafter.

G. 2 minutes in this protocol refers to 2 minutes or slightly longer depending on when 30 compressions before a rhythm analysis are complete. During 2 minute CPR cycles, give 2 breaths (each ~ 1 sec) after every 30 compressions.

H. Whenever possible, a designated provider should maintain a finger(s) on the femoral pulse (or carotid pulse if femoral pulse is inaccessible) during CPR. This anables an immediate pulse check without a pulse "hunt" (by already having a hand on its location) whenever CPR is paused for rhythm analysis, or at any

CARDIAC ARREST (CONT.)

other time that the protocol calls for a pulse check.

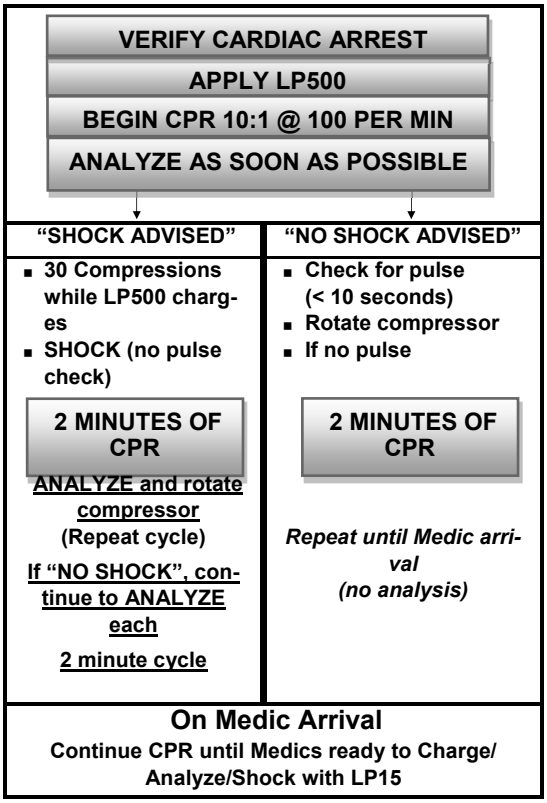
l. Patients with a left ventricular assist device "LVAD" are eligible for CPR. If a patient with an LVAD presents without signs of life, initiate CPR and apply the AED per standard CPR procedures.

Additional Points:

- Any patient found unconscious, unresponsive with a pulse but with systolic BP <60 should have CPR initiated and an AED attached as soon as possible. If a pulse is detected during resuscitation but systolic blood pressure < 60, resume CPR.
- In children 1-8 yrs (absence of secondary sexual characteristics; usually <55 lbs), perform chest compressions at 100-120/min, ~ 2 inches or 1/3 of chest depth at compression to ventilation ratio of 15:2 without advanced airway and 10:1 with advanced airway.
- In infants < 1 yr compress chest at 100-120 min, 1½ inches or 1/3 of chest depth with compression to ventilation ratio of 15:2 without advanced airway and 10:1 with advanced airway.
- In newborns, perform chest compressions at 100-120 min. with a compression to ventilation ratio of 15:2 without advanced airway and 10:1 with advanced airway.
- If at anytime 3 consecutive "no shocks" are advised and there is no pulse, continue CPR without interruption until medics arrive.
- Cardiac arrest protocols may change. Always follow current agency protocols.

CARDIAC ARREST (SEATTLE FD)

Seattle Fire Department
Cardiac Arrest AFTER Arrival
Adults ≥ 8 Years Old



CARDIAC ARREST (SEATTLE FD)

Seattle Fire Department
Cardiac Arrest Before Arrival
Adults ≥ 8 Years Old

VERIFY CARDIAC ARREST

2 MINUTES OF CPR

10:1 @ 100 PER MIN

1st ANALYSIS
ROTATE COMPRESSOR

"SHOCK ADVISED"	"NO SHOCK ADVISED"
▪ 30 Compressions while LP500 charges ▪ SHOCK (no pulse check) **2 MINUTES OF CPR** ANALYZE and rotate compressor (Repeat cycle) If "NO SHOCK", continue to ANALYZE each 2 minute cycle	▪ Check for pulse (< 10 seconds) ▪ Rotate compressor ▪ If no pulse **2 MINUTES OF CPR** *Repeat until Medic arrival (no analysis)*

On Medic Arrival
Continue CPR until Medics ready to Charge/ Analyze/Shock with LP15

CARDIAC ARREST (SEATTLE FD)

Seattle Fire Department
Cardiac Arrest
Pediatrics < 8 Years Old
(Adults ≥ 8 use LP500)

VERIFY CARDIAC ARREST

2 MINUTES OF CPR

BEGIN CPR 10:1 @ 100 PER MIN

- **Check for pulse (less than 10 seconds)**
- **Rotate compressor**
- **If no pulse**

2 MINUTES OF CPR

Repeat until Medic arrival

CPR FOR ADULTS

MANUVER	ADULT HCP: Adolescent and older
RECOGNITION	Unresponsive (for all ages)
	No breathing or no normal breathing (ie, only gasping)
	No pulse palpated within 10 seconds for all ages (HCP only)
ACTIVATE: Emergency Response Number (lone rescuer)	Assure ample support from BLS Activate ALS if not already enrote
CPR Sequence	C-A-B
Compression Rate	100-120/min
Compression Depth	At least 2 inches (5cm)
Chest Wall Recoil	Allow complete recoil between compressions Rotate compressors every 2 minutes
Compression Interruptions	Minimize interruptions in chest compressions Attempt to limit interruptions to <10 seconds
Airway	Head tilt-chin lift (HCP suspected trauma: jaw thrust)
Compression-to-ventilation ratio (until advanced airway placed)	30:2 Prioritize compressions
Ventilations:	BVM ventilations just to achieve chest rise. Each breath is provided in ~1 second
Ventilations with advanced airway (HCP)	1 breath every 6-8 seconds (8-10 breaths/min) Asynchronous with chest compressions About 1 second per breath Visible chest rise
Foreign-body airway obstruction	**Responsive:** Abdominal thrusts **Unresponsive:** CPR with airway check
AED Defibrillation	Attach and use AED as soon as possible. Minimize interruptions in chest compressions before and after shock; resume CPR beginning with compressions immediately after each shock.

CPR FOR CHILDREN AND INFANTS

MANUVER	CHILD HCP: 1 year to Adolescent	INFANT Under 1 year of age
RECOGNITION	Unresponsive (for all ages)	
	No breathing or only gasping)	
	No pulse palpated within 10 seconds for all ages (HCP only)	
ACTIVATE: Emergency Response Number	Assure ample support from BLS Activate ALS if not already enrote	
CPR Sequence	C-A-B	
Compression Rate	100-120 /min	
Compression Depth	At least 1/3 AP diameter About 2 inches (5cm)	At least 1/3 AP diameter About 1 ½ inches (4cm)
Chest Wall Recoil	Allow complete recoil between compressions HCP rotate compressors every 2 minutes	
Compression Interruptions	Minimize interruptions in chest compressions Attempt to limit interruptions to <10 seconds	
Airway	Head tilt-chin lift (HCP suspected trauma: jaw thrust)	
Compression-to-ventilation ratio (until advanced airway placed)	15:2	
Ventilations:	BVM ventilations just to achieve chest rise. Each breath is provided in ~1 second	
Ventilations with advanced airway (HCP)	1 breath every 6-8 seconds (8-10 breaths/min) 10:1 1 Asynchronous breath every 10th Compression	
Foreign-body airway obstruction	**Responsive:** Abdominal thrusts **Unresponsive:** CPR with airway check	**Responsive:** 5 Back slaps and 5 chest thrusts (repeat) **Unresponsive:** CPR with airway check
AED Defibrillation	Not performed on children less than 8 years	

CPR For Newborn

Maneuver HCP = Health Care Provider	Newborn
AIRWAY	Head tilt/chin lift (Suction only as needed)
BREATHS Initial	2 effective breaths at 1 second/breath **(obtain chest rise)**
Rescue breathing without chest compression	40-60 breaths/minutes (~1 breath every 1 to 1.25 seconds)
CIRCULATION	Check pulse at umbilical cord stub or over the heart
Compression land-marks	Just below the nipple line
Compression Method (allow full recoil)	2 rescuers perform skill: "two thumb-encircling hands" technique
Compression Depth	1/3 depth of the chest
Compression Rate	100-120 per minute
Compression/ Ventilation Ratio and events/minute	15:2 prior to advanced airway 10:1 with advanced airway
AED Defibrillation	Not performed on children less than 8 years

ECG MONITORING

The indications for ECG monitoring include: chest pain, arrhythmia, congestive heart failure, syncope or hypotension.

For BLS providers to perform ECG monitoring the following criteria must be met:

- An approved course in ECG monitoring
- Techniques and rhythm recognition.
- Medical Program Director approval for addition of ECG monitoring to EMT care plans.

End of Life Issues

EMTs have the responsibility to determine a patient's resuscitation wishes, and honor them if possible.

Resuscitation efforts may be withheld or stopped in ANY of the following:

- Injuries incompatible with life
- Lividity, rigor mortis
- A Do Not Attempt Resuscitation (DNAR) directive. This directive may be in the POLST (Physician Orders For Life-Sustaining Treatment) format. This is based on patient's wishes.
- "Compelling reasons" to withhold resuscitation can be invoked when written information is not available, yet the situation supports that the resuscitation effort will be futile, inappropriate, and inhumane. A resuscitation effort may be withheld when the following two conditions are BOTH met:
  - End stage of a terminal illness
  - Family indicates that the patient would not wish to have a resuscitation effort

If a resuscitation effort has been initiated and the EMT is provided with a DNAR directive or compelling reasons that such an effort should be withheld, the resuscitation should be stopped.

Documentation is important. In the medical report, describe the patient's medical history, presence of a DNAR directive if any, or verbal request to withhold resuscitation efforts.

END OF LIFE ISSUES (CONT.)

"Do not attempt resuscitation" does not mean "do not care." A dying patient for whom no resuscitation effort is indicated can still be provided with supportive care, which may include the following: Clear the airway (including stoma) of secretions with suction device.

- Clear the airway (including stoma) of secretions with suction device
- Provide oxygen using a cannula or non-rebreather.
- Control any bleeding.
- Provide emotional support to patient and family.
- Contact the patient's private physician.
- Contact hospice if involved.
- Paramedics should be called if additional judgment or support is needed.

When in doubt, initiate resuscitation.

-

EPISTAXIS (NOSEBLEED)

- Stop a non-traumatic, “everyday” nosebleed by asking the patient to sit, leaning forward. This prevents blood from being swallowed or aspirated into the lung.
- Apply direct pressure by pinching just below the bridge of the nose.
- Apply continuous pressure for 10 to 15 minutes
- Additionally, you can apply a cold pack to the bridge of the nose.

HELICOPTER PROCEDURES

The following are guidelines for the use of medical helicopters. In King County, Airlift Northwest is the primary medical helicopter.

The use of medical helicopters may be considered when estimated ground transport times are likely to be excessive, due to traffic, distance.

Use of medical helicopters may be considered for any critical ill of injured patient requiring care at a facility outside of the local area when transport times are likely to be excessive.

A medic unit must be dispatched anytime a medical helicopter is being considered.

Consider a consultation with the responding medic unit prior to requesting a medical helicopter. Requests for helicopters are made through dispatch.

Normally, there should only be one patient per helicopter. If two patients need to be flown, request a second helicopter.

MEDICATION ADMINISTRATION

Follow departmental protocol regarding the administration of medication

ASSISTING WITH ADMINISTRATION OF PRESCRIBED MEDICATION

- Initiate assessment and treatment of the patient as indicated by the signs and symptoms.
- Verify the following when possible:
  - medication has been prescribed by a physician for the patient
  - medication inside the container is the one indicated on the prescription label
  - medication has not passed the expiration date on the prescription label
- Determine the last time the patient self-administered the medication and the number of doses taken.
- If in doubt, contact a medical control doctor, patient's personal physician, or paramedic for medical direction.
- Assist medication administration as directed.
- Document the administration of the medication by recording the drug, dose, method, time and name of physician ordering the assistance with medication.
- After 5 minutes, reassess and document the patient's vital signs and any changes.

INHALERS (MDIs)

MEDICATION ADMINISTRATION

- Patients with chronic respiratory diseases such as asthma and COPD will often have prescriptions for bronchodilator, anticholinergic, and/or steroid inhalers.
- The EMT may locate the inhaler and hand it to the patient. The patient should be able to self-administer the medication.
- If respiratory distress persists after 1 treatment, this is an ALS indicator. EMTs are authorized to assist in one treatment only, unless ALS care will be delayed >15 mins.
- If the patient has already used the medication in excess of the prescription, do not assist in additional treatment.
- If the patient is unable to self-administer the medication, you should focus on airway management and oxygenation.

NITROGLYCERIN

The patient should not have taken Viagra or Levitra within the past 24 hours or Cialis within the past 48 hours.

- The patient may be assisted in taking prescribed nitroglycerin (NTG or nitro) if the pain is the same type of pain for which he or she normally takes nitroglycerin (i.e., typical angina) and systolic **BP greater than 100 mmHg at all times**. The EMT may locate the nitro (pill or spray), open the container, and offer it to the patient. Do not administer the drug into the patient's mouth. If in doubt, consult with the medical control doctor or paramedic before assisting with nitro.

The following conditions must be met before assisting with nitro:

- Complaint of pain similar to that normally experienced as angina or cardiac pain
- Blood pressure greater than 100 mmHg systolic at all times
- Patient takes no more than three doses total (5 minutes apart)
- Prescription expiration date should not have passed
- Patient should be sitting or lying down before assisting with nitro
- Must be the patient's prescribed nitroglycerin

ORAL GLUCOSE

- Prompt recognition and treatment of hypoglycemia is an important EMT skill.
- **Indications for oral glucose:**
- Suspected hypoglycemia in a diabetic (confirm through blood glucometry when available)
- Patient is awake and able to swallow

Contraindications for oral glucose:

- Unconsciousness
- Patient is unable to swallow

Procedure

- Help the patient sip or chew any sugar containing substance such as honey, orange juice, candy, or granulated sugar or place a bead of the commercial sugar preparation under the patient's tongue.
- Monitor patient's response to the sugar.
- Repeat blood glucometry (when available).
- If the patient is left at home, you must leave aftercare instructions.

MULTI-CASUALTY INCIDENT

MEDICAL GROUP SUPERVISOR (MGS)

Major Responsibilities of the MGS:

Assign triage, treatment, and transportation team leaders.

The MGS may initiate specific tasks:

- Notify Disaster Medical Control Center (DMCC). Primary DMCC is **Harborview Medical Center: 206-744-3074** Ask for the "Charge Nurse."
- In the event that HMC is unavailable, the secondary DMCC is **Overlake: 425-455-6941**
- Consider initiating the call-up of off-shift personnel and the activation of Special Assignment Units through the ICS.
- Request additional supplies and equipment through the IC.
- Maintain records.

MEDICAL POSTIONS WITHIN THE MCI PLAN

The Medical team leaders include:

- Triage Team Leader
- Treatment Team Leader
- Transportation Team Leader

THE TRIAGE TEAM

Major Responsibilities:

- Triage may be accomplished using "Sick or Not Sick", or agency specific triage method.
- Obtain the initial patient count for the IC.
- Perform the initial triage of all patients and apply triage tape and unique patient identifier wristband
- Confirm patient count and triage colors.

TREATMENT TEAM LEADER

Major Responsibilities:

MULTI-CASUALTY INCIDENT (CONT.)

- Set up treatment areas: red, yellow, and green. Assign leaders to each.
- Assure that all patients are triaged and taped.
- Direct and supervise treatment area.
- Prioritize patients for transportation.

TRANSPORTATION TEAM LEADER

Major Responsibilities:

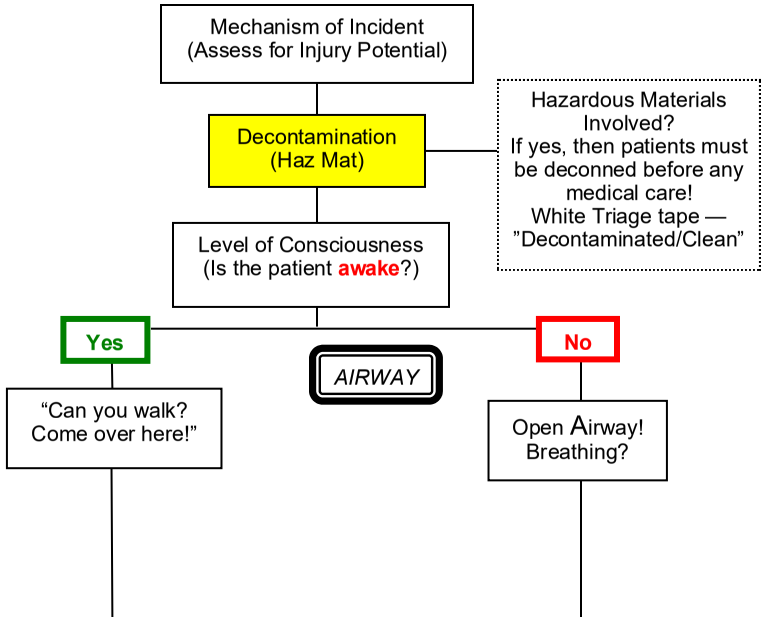
- Set up ambulance staging area.
- Designate an Ambulance Staging Manager.
- Maintain medical communications.
- Document patient destination.

Communication with DMCC should be brief but should include:

- Color(s) of patients that are loaded in transport vehicles awaiting destination
- Special information (pediatric, burns, or OB trauma).
- Confirm hospital destination

Note: Large-scale MCIs may require assigning a DMCC Coordinator to assist with communications

POLICIES & PROCEDURES - FIELD TRIAGE ALGORITHM (ABC)



FIELD TRIAGE ALGORITHM

FIELD TRIAGE ALGORITHM (CONT.)

AVPU	
A	**Alert** – The patient's eye open spontaneously as you approach. The patient is aware and responsive to the environment. The patient appropriately follows commands.
V	**Verbal stimulus response** – The patient's eyes do not open spontaneously. The patient's eyes open to verbal command and the patient is able to respond in some meaningful way when asked.
P	**Painful stimulus response** – The patient does not respond to your questions but moves or cries out when a painful (noxious) stimulus is applied: earlobe pinch or pressure behind earlobe.
U	**Unresponsive** – the patient does not respond to <u>any</u> stimulus.

GLASGOW COMA SCALE

The **Glasgow Coma Scale** (GCS) is a means of measuring and monitoring level of consciousness by calculating a score based on the best eye, verbal, and motor response. The lowest score possible is 3, the highest is 15. The GCS is part of Code CVA (see page 45).

Eye Response		Best Verbal Response		Best Motor Response	
Spontaneously opens	4	Oriented and talking	5	Obeys commands	6
Opens to voice	3	Disoriented and confused	4	Locates pain	5
Opens to pain	2	Inappropriate words	3	Withdraws from pain	4
No response	1	Incomprehensible	2	Flexes to pain	3
		No response	1	Extends to pain	2
				No response	1

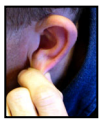
NOXIOUS STIMULI

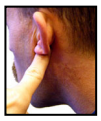
Indications

Any patient with decreased LOC.

The only two approved methods of delivering noxious stimuli are:

- Firm earlobe pressure (Left)
- Firm pressure behind earlobe (Right)





Apply firm pressure to the earlobe for up to five seconds in order to assess a response to painful stimulation. This stimulation may be applied once or twice for no longer than 15 seconds during the initial evaluation and infrequently thereafter, if monitoring of the level of consciousness is necessary.

Prolonged application of stimuli, excessive applications, chemical stimuli, sternal rubs or eyeball pressure are not indicated nor approved by the Medical Program Director.

OXYGEN DELIVERY

USE OF SUPPLEMENTAL OXYGEN

- Oxygen is mandatory at high flow rates for patients with smoke inhalation or suspected carbon monoxide (CO) poisoning due to inaccurate readings from the hemoglobin being saturated by the CO molecule.
- Oxygen is indicated in the following clinical situations when the initial percent saturation is less than 95% or is unobtainable. The target goal is 95% or greater oxygen saturation as indicated on a pulse oximeter.
  - Shock
  - Complicated labor,
  - Newborn persistent cyanosis or respiratory distress,
  - Decompression illness or suspected decompression illness,
  - Mismatch between the oximetry and clinical signs—for example tachypnea with normal oximetry or dusky, bluish appearance with normal oximetry
- For all other clinical situations rational oxygen therapy should be guided by the patient's clinical appearance and/or pulse oximetry. If the oxygen saturation is <95%, then oxygen is indicated. When the patient's oxygen saturation is 95% or greater, do not administer oxygen.

The amount of oxygen given and the method of administration depend on many factors including a patient's medical history and the type of problem.

CONSCIOUS PATIENT WITHOUT RESPIRATORY DISTRESS

OXYGEN DELIVERY (CONT.)

Flow	Volume	Device
Low flow	2 - 6 liters/ minute	Nasal cannula
High flow	10 - 15 liters/minute	Nonrebreathing mask
High flow with ventilation	15+ liters/minute	Bag-valve mask with reservoir

Some patients will not require oxygen. Consider the acute condition and the patient's clinical history. If the patient has a minor circumstance (minor trauma), stable vital signs, and no ALS indicators, oxygen may not be required. In other patients, low flow oxygen at 2-4 liters is reasonable as you determine nature of illness and patient symptoms.

CONSCIOUS PATIENT WITH RESPIRATORY DISTRESS

Increase oxygen delivery according to the patient's condition moving from nasal cannula to nonrebreathing mask. Use respiratory rate, effort, exchange, ease of speaking, skin signs, and level of consciousness as a guide. When using a nonrebreathing mask, remember to use a liter flow that is high enough to keep the bag inflated at least 1/3 full with the patient's deepest inspiration.

CONSCIOUS PATIENT WITH SEVERE RESPIRATORY DISTRESS

Patients in severe respiratory distress may need assistance to breathe, as provided by a BVM with high flow oxygen. These patients may present with inability to speak, extreme exhaustion, minimal air movement, cyanosis, agitation, sleepiness, or a decreasing LOC. Examples include patients with chest or throat injury, airway obstruction, CHF, COPD, asthma, and near drowning. To assist

OXYGEN DELIVERY (CONT.)

respirations in a conscious patient, first explain the treatment to the patient then gently place the mask over the patient's nose and mouth and begin ventilations. Observe chest and abdomen and time the assisted breaths to coincide with the patient's or coach the patient to breathe with bag compressions.

UNCONSCIOUS PATIENT WITH SUFFICIENT RESPIRATORY EFFORT

Oxygen delivery may range from low-flow with a nasal cannula to high-flow with a nonrebreathing mask. Patient's level of consciousness and vital signs (especially respiratory rate and effort), color, and nature of illness should determine oxygen flow level. Continually evaluate respiratory rate and effort and do not hesitate to assist respirations if necessary.

UNCONSCIOUS PATIENT WITH INSUFFICIENT OR NO RESPIRATORY EFFORT

Ventilate patient or assist ventilations with a BVM and high flow oxygen. If the patient resists the attempts to ventilate, try to time breaths with the patient's by compressing the bag as the patient inhales.

SPECIAL NOTE: COPD (emphysema, chronic bronchitis)

The physiology of a person with COPD differs from that of a healthy person in that the primary stimulus to breathe comes from a decrease of oxygen in the blood rather than an increase in carbon dioxide. Providing the COPD patient with high concentrations of oxygen can depress their respiratory drive. Therefore, it is advisable to start COPD patients with lower levels of oxygen, as long as they are not in severe respiratory distress. Two liters per minute by

OXYGEN DELIVERY (CONT.)

nasal cannula is usually sufficient. If the COPD patient does not improve with low levels of oxygen, increase oxygen up to 4 and then 6 liters per minute.

A COPD patient whose respiratory drive is diminished due may present with increasing lethargy, confusion, and decreasing respiratory rate and effort. If this occurs, be prepared to assist ventilations.

If a COPD patient becomes unresponsive and/or stops breathing, ventilate via BVM

> EMTs have the option of using a non-rebreather if nasal cannula at four (4) liter per minute is inadequate or patient has signs of hypoxia.

with a high flow oxygen.

CAUTION: Over ventilation may worsen 'air trapping' and could cause pneumothorax so provide ample time for exhalation. Do not hyperventilate a COPD patient.

SPECIAL NOTE: Infant And Young Child

For an infant or young child with mild to moderate respiratory distress consider the "blow-by" technique. Hold the end of a supply tube or a nonrebreather mask approximately two inches away from the patient's face. Another method to supply "blow-by" is with a paper cup. This can be done by pushing a supply tube through the bottom of the cup. Set the flow rate to 4-6 liters per minute.

PATIENT POSITIONING

Proper positioning can reduce pain, improve physiological function, and improve the patient's sense of well-being.
There are three positions to consider:

- Recovery, Semi-reclining, and Shock position

RECOVERY POSITION

This position is used for non-traumatic patients who are unresponsive but breathing. It protects the airway from vomit and secretions. (Top, page 94)
The following steps are recommended:

- Kneel beside the patient and straighten the legs.
- Place the patient's arm that is nearest to you at a right angle to body, elbow bent, palm up.
- Place the other arm across the chest/abdomen *If the patient is small, bring this arm farther across so that the back of the hand can be held against the patient's nearest cheek.*
- Grasp the patient's far-side thigh above the knee; pull the thigh up towards the patient's body. (Left)

- Place your other hand on the patient's far-side shoulder and roll the patient toward you. Begin moving the patient's uppermost hand toward the patient's nearest cheek. (Right) Adjust the leg you are holding until both the hip and knee are bent at right angles.
- Tilt the patient's head back and place the uppermost hand under the patient's cheek.

PATIENT POSITIONING (CONT.)

Use this hand to maintain head tilt .Use chin lift if necessary.

In suspected

Monitor respirations closely.

spinal cord trauma/injury first immobilize the patient with the appropriate size c-collar and use spinal mobility restriction. If the patient is unconscious, monitor and protect the airway. If necessary, rotate patient 90 degrees to facilitate drainage. Maintain spinal restriction.

SEMI-RECLINING (SEMI-FOWLER'S)

In the semi-reclining position (Left) a patient is usually sitting at a forty-five degree angle. A gentle knee bend adds comfort and helps to maintain the upright position. Additional pillows behind the head and knees may improve comfort. Patients with mild to moderate respiratory symptoms may benefit from this position.

SHOCK POSITION

In this position the feet are elevated up to twelve inches and the patient is supine (Right).

PATIENT RESTRAINT

If the reason for use of a device is to prevent movement and it is done without the consent of the patient, it is a restraint.

Generally, restraints are used in the prehospital environment whenever dangerous behavior (especially danger to self or others) is encountered. The provider has a clear duty to exercise increased vigilance for the safety of the patient, because the patient is unable to self protect while restrained. Likewise, the safety of the responders should be ensured.

PROCESS OF RESTRAINT

Safety and the prevention of injuries are the major concerns in the process of restraint application. It is imperative to maximize the patient's self-control before deciding to apply restraints.

- **Self-control**. The first step is to encourage the patient to exercise all the self-control he or she possesses. A statement such as "I know you don't want to hurt yourself or anyone else. I want you to try to stay in control. I know you can do it" is an example.
- **Offer to help**. Anxiety can interfere with concentration and an offer of assistance should reduce anxiety. A statement such as "I want to assure you that we will help you. We will not let you hurt yourself or someone else" is an example of an offer to help.
- **Be ready and able to overpower patient.** Never attempt physical restraint without the resources needed to safely overpower a patient.
- **Physical restraint**. This is the time when most injuries tend to occur. Plan the actions so that each provider involved clearly understands his or her role. Typically, one person is assigned to each limb. One provider should communicate

PATIENT RESTRAINT (CONT.)

with the patient continuously. Once a decision is made to restrain, act quickly. Use only the force necessary for restraint. Depending on local requirements, it may be helpful to have the police present during restraint. EMTs should be aware of their own personal safety.

TYPES OF RESTRAINTS

The kinds of restraints used in the prehospital environment vary tremendously. Handcuff and cable ties should only be applied and removed by law enforcement personnel.

Once a patient is restrained, he or she should be carefully monitored to avoid airway obstruction. An NRM with appropriate oxygen flow may be applied to protect the EMS personnel from spit. Alternatively a "spit sock" may be used.

DOCUMENTATION

It is important to document the behavior that made restraints necessary as well as the restraint technique used. The documentation must reflect continual concern for the patient's safety and well-being as well as descriptions of the patient's ongoing mental status and behavior.

Do not remove restraints until directed by the hospital emergency department personnel.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

INFECTIOUS DISEASE PREVENTION

HANDWASHING

Handwashing is the most effective way to prevent transmission of infectious disease.

Wash Hands

- Before and after patient contact
- Before eating, drinking, smoking or handling food
- Before & after using the bathroom
- After cleaning or checking equipment

PERSONAL PROTECTIVE EQUIPMENT (PPE)

***Gloves** and **eye protection** must be worn for every patient.*

FULL PPE *for possible infectious contacts*

- **Donning Sequence (MEGG)**
  - **M**ask* > **E**ye Protection > **G**own > **G**loves
  - *Mask patient (if .possible)*
- **Doffing (removal) Sequence**
  - Gloves > Gown > **Hand cleaner**
  - Eye Protection > Mask > **Hand cleaner**
  - Handle as contaminated waste
  - Decon Eye Protection

INFECTIOUS DISEASE

- **Febrile Respiratory Illness**
  - Dispatchers will notify units of - Infectious symptoms or locations
  - Dispatch info *or* fever w/ cough or illness *or* possible infectious disease

*Fit tested

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- **Full PPE (MEGG)**
  - **M**ask*, **E**ye Protection, **G**owns, **G**loves
  - *Mask patient (if possible)*
  - Limit patient contacts
- **After Patient Contact**
  - Remove PPE – (approved sequence)
  - Dispose of PPE as contaminated waste
  - On scene decon - eye protection & equipment w/ germicidal cleaner
  - Hospital decon - eye protection, equipment and apparatus
- **At station**
  - Decon affected equipment & contacts (kits, BP/steth, radios, clipboards, etc.)
  - Wash hands before leaving apparatus floor.

*Fit tested

PPE: Reportable Exposures

Bloodborne Exposure

This is an exposure or potential exposure to Bloodborne Pathogens such as Hepatitis B, Hepatitis C, HIV or other pathogens that may be transmitted through contaminated body fluids or tissues. Examples include: blood, bloody body fluids including semen, vaginal secretions, cerebrospinal fluid, synovial, pleural, pericardial, and amniotic fluids.

An exposure only occurs if:

- There is a needle stick or cut with a possibly contaminated needle or object.
- There is contact with non-intact skin (e.g. skin that is cut, chapped, abraded, or afflicted with dermatitis.)
- There is fluid contact with your mucous membranes such as eyes, nose, mouth.

Steps to take following exposure:

- **Initiate self-care** which **includes** washing the site thoroughly with soap and water. Flush mucous membranes with water only.
- **Immediately report exposure** to immediate supervisor and exposure control officer for risk assessment and follow-up.

Follow individual department's exposure control policy. (see also PPE page 97).

For all other exposures follow your department's infection/exposure control policy.

PHYSICAL ABUSE AND NEGLECT OF CHILDREN AND VULNERABLE

Child Abuse

Signs and Symptoms of suspected abuse and neglect include:

- Multiple bruises in various stages of healing
- Bilateral/symmetrical injuries and/or bruises
- Injury inconsistent with mechanism described
- Repeated calls to the same patient or address
- New suspicious injuries
- Parents, guardian or caregiver inappropriately concerned
- Conflicting stories
- Fear on the part of the patient to discuss the incident
- Lack of proper supervision of the patient
- Malnourished appearance
- Unsafe living environment
- Untreated chronic illness

Vulnerable Adults

Defined as adults age 60 and older who cannot care for themselves and adults age 18 and older who, have a legal guardian, are developmentally delayed, live in a DSHS licensed facility, receive in home care services, or have personal care aide who is paid for their services.

Signs of abuse and neglect include:

- Unexplained injuries or behavior
- Reports of physical, mental, or sexual abuse
- Reports of being abandoned or deserted without basic necessities
- Failing to provide basic life necessities, not taking action to prevent harm or pain
- Failure to provide safe living conditions
- Untreated injuries or health problems

PHYSICAL ABUSE AND NEGLECT OF CHILDREN AND VULNERABLE ADULTS (CONT.)

- Intentionally taking advantage of a vulnerable adult either financially, or personally
- Undue influence or coercion

By Washington state law, Fire Fighters, Paramedics, and EMT's are mandatory reporters.

REPORT NEGLECT/ABUSE OF VULNERABLE ADULTS TO DSHS:
1-866-363-4276 (1-866-ENDHARM)

Involve local Police in all suspicious cases. Call 911.

POSTURAL VITAL SIGNS

Indications For Measurement of Posturals

- Acute volume loss (such as suspected GI bleeding or internal hemorrhage)
- Generalized weakness
- Complaint of dizziness, lightheadedness, or fainting
- Prolonged vomiting or diarrhea

Contraindications

- Symptomatic hypotension while supine (systolic blood pressure less than 90 mmHg)
- Third trimester bleeding
- Trauma patients
- Patient with suspected cardiac chest pain

To Check For Postural Vital Signs

- Obtain blood pressure and heart rate after two (2) minutes in supine position. Then bring patient to seating position.
- Next, stand patient upright slowly (**caution:** lay down patient promptly if he or she becomes dizzy or lightheaded when seated or standing).
- After patient stands for one (1) minute obtain blood pressure and heart rate.
- If fainting or light headedness develops return patient to supine position.

Positive findings

- Increase in pulse of 20/minute or more or a 20 mmHg or more drop in systolic BP from supine to standing with associated symptoms
- Dizzy, lightheaded, or fainting while sitting or standing

Assisting Police

A positive postural is an ALS indicator in an appropriate clinical setting

PSYCHIATRIC EVALUATIONS

Police may call EMS for assistance in determining whether a psychiatric patient is stable enough to go to jail. Your evaluation must be based on Sick/Not Sick and MOI and IOS. You must document vital signs.

PULSE OXIMETRY

Pulse oximetry is an approved protocol but optional by individual departments.

Indications For Use

Pulse oximetry may be used anytime oxygen is in use or is to be administered to a patient based upon complaint or condition. This may include:

- Shortness of breath
- Chest pain
- Altered level of consciousness (LOC)
- Pregnancy/active labor
- Trauma
- Any time the EMT believes the oxygen saturation level needs to be assessed

Contraindications

- None

Use and Administration

Place the probe on a clean digit. Whenever possible, apply the probe before oxygen administration in order to obtain a "room air" reading.

Under no circumstances should oxygen administration be delayed to obtain an oximetry reading.

NOTE

Pulse oximetry is inaccurate in the following clinical situations:

- Cardiac arrest
- Shock
- Hypothermia
- Carbon monoxide poisoning
- Jaundice

PULSE OXIMETRY (CONT.)

- Presence of nail polish

Pulse oximetry is a tool that should be used on the context of all other information including patient's circumstances, presentation, and exam.

Pulse Ox device should NOT be used to acquire distal pulse readings. This should always be done by palpating the radial pulse.

SICK/NOT SICK

The SICK/NOT SICK approach to rapid patient assessment is a mainstay in determining a patient's physiologic status. Whether medical or trauma, adult or pediatric, SICK/NOT SICK is the tool of choice for rapid assessment and appropriate care.

The clinical indicators used in the adult SICK/NOT SICK approach provide clarity and offer clear and CONCISE indicators for determining a patient's physiologic stability. Often, these indicators are observable from across the room without even touching the patient.

Additional considerations that need to be incorporated into your SICK/NOT SICK decision-process include: mechanism of injury (MOI), nature of illness (NOI) and index of suspicion (IOS). These CONSIDERATIONS will help you determine SICK/ NOT SICK.

NOTE

- MOI - Mechanism of Injury
- NOI - Nature of Illness
- IOS - Index of Suspicion

Adult SICK/NOT SICK Clinical Indicators:

- Chief complaint and MOI/NOI/IOS
- Respirations
- Pulse (circulation)
- Mental status
- Skin signs (color, moisture, temperature)
- Body position/obvious trauma

SICK/NOT SICK (CONT.)

Pediatric Sick/Not Sick

The pediatric SICK/NOT SICK approach uses an itriad of indicators collectively called the “pediatric assessment triangle.” The triangle defines key indicators of physiologic stability, allowing the EMS provider to make an accurate and timely decision on the status of a pediatric patient.

First, determine the chief complaint and consider MOI, NOI, IOS

Then assess the elements of the:

Pediatric Assessment Triangle

Appearance	Work of Breathing	Circulation
Alertness	Retractions	Color
Color	Nasal flaring	Temperature
Distractiblity	Body position	Capillary refill time
Consolability	Abdomen sounds	Pulse
Eye contact		
Motor activity		
Speech/cry		

SICK/NOT SICK Medical

Rapid Patient Assessment

Considerations: BSI, scene size-up, family member, additional staffing

Chief Complaint/NOI*
Respirations
Pulse
Mental Status
Skin Signs/Color
Body Position
(Primary Assessment)

The Clinical Picture

SICK

Short report to incoming units
Treat any life-threatening conditions immediately

100% 0_2 nonrebreather mask or BVM

History Taking
- Baseline vitals
- Rapid medical survey
- SAMPLE history

Appropriate Position

Rapid Transport/ALS

Secondary Assessment
Includes a complete set of vitals

Reassessment

DECIDE

Short Report to incoming units

NOT SICK

Low/Moderate Flow 0_2

Care for any obvious conditions as needed

History Taking
- Baseline vitals
- Rapid medical survey
- SAMPLE history
- OPQRST

Secondary assessment
*Includes a complete set of vitals

Appropriate Treatment

Appropriate Transport

Reassessment

*NOI - Nature of Illness

SICK/NOT SICK Trauma

Rapid Patient Assessment

Considerations: BSI, scene size-up, family member, additional staffing

Chief Complaint/MOI*
Respirations
Pulse
Mental Status
Skin Signs/Color
Obvious Trauma
(Primary Assessment)

The Clinical Picture

DECIDE

SICK

- Short report to incoming units
- Rapid extraction
  Treat any life-threatening conditions immediately
- History Taking
  - Baseline vitals
  - Rapid trauma survey
  - SAMPLE history
- Immobilize spine
- Rapid Transport/ALS
- Secondary Assessment
  Includes a complete set of vitals
- Reassessment

Low/Moderate Flow 0_2

100% 0_2 nonrebreather mask or BVM

Short Report to incoming units

NOT SICK

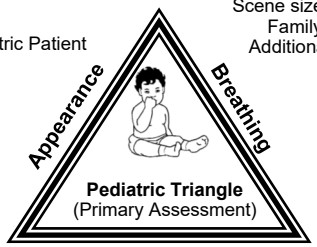
- Spinal stabilization
  Care for any obvious or additional injuries as needed
- History Taking
  - Baseline vitals
  - Rapid medical survey
  - SAMPLE history
- Secondary assessment
  *Includes a complete set of vitals
- Appropriate Treatment
- Appropriate Transport
- Reassessment

*MOI—Mechanism of Injury

SICK/NOT SICK
Medical

Rapid Pediatric Patient Assessment

Considerations:
Scene size-up/NOI*
Family member
Additional staffing



Pediatric Triangle
(Primary Assessment)

Circulation/Skin Color

DECIDE

SICK

- Short report to incoming units
- Treat any life-threatening conditions immediately
- 100% 0_2 nonrebreather mask or BVM
- History Taking
  - Baseline vitals
  - Rapid medical survey
  - SAMPLE history
- Appropriate Position
- Rapid Transport/ALS
- Secondary Assessment *Includes a complete set of vitals
- Reassessment (Keep Warm)

NOT SICK

- Low/Moderate Flow 0_2
- Care for any obvious conditions as needed
- History Taking
  - Baseline vitals
  - Rapid medical survey
  - SAMPLE history
  - OPQRST
- Secondary assessment Includes a complete set of vitals
- Appropriate Treatment
- Appropriate Transport
- Reassessment

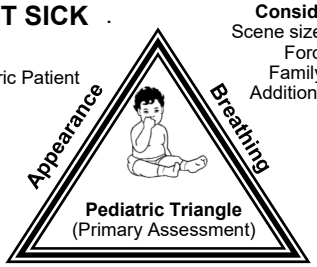
Request ALS. Short Report to incoming units

*NOI - Nature of Illness

SICK/NOT SICK Trauma

Rapid Pediatric Patient Assessment

Considerations:
Scene size-up/MOI*
Forcible entry
Family member
Additional staffing



Pediatric Triangle
(Primary Assessment)

Circulation/Skin Color

SICK ← **DECIDE** → **NOT SICK**

SICK

Short report to incoming

Rapid extrication
Treat any life-threatening conditions immediately

History Taking
- Baseline vitals
- Rapid trauma survey
- SAMPLE history

Immobilize spine

Rapid Transport/ALS

Secondary Assessment
Includes a complete set of vitals

Reassessment
(Keep Warm)

Low/Moderate Flow 0_2

100% 0_2 non-rebreather mask or BVM

Request ALS. Short Report to incoming units

NOT SICK

Spinal stabilization
Care for any obvious or additional injuries as needed

History Taking
- Baseline vitals
- Rapid medical survey
- SAMPLE history

Secondary assessment
Includes a complete set of vitals

Appropriate Treatment

Appropriate Transport

Reassessment
(Keep Warm)

*MOI—Mechanism of Injury

SPINAL MOBILITY RESTRICTION (SMR) POLICY

Guidelines: Seattle and King County

These guidelines are to be used for patients with trauma or suspected injury.

Long spine boards (LSB) and cervical collars (CC), which are the traditional mechanism for spinal mobility restriction (SMR), have both risk and benefits. Elderly patients and patients with respiratory diseases may do poorly with the application of these devices. Therefore, LSBs and CCs should be used only when indicated.

A LSB may most useful for extricating an unconscious or difficult to move patient or providing a firm surface for chest compressions. However, other devices may be appropriate for patient extrication and movement, e.g. a mega-mover.

If the patient would normally require SMR but has a previously existing condition that makes securing the patient to a LSB impractical (such as kyphosis), the EMT should use their best judgment to secure the patient to the stretcher with the goal of minimizing movement of the spine.

Clinical Indications for SMR:

1. Immobilize patients with a LSB (or similar spinal mobility restriction device, e.g. a full body vacuum splint) *and* cervical collar for any of the following conditions:
   - Blunt trauma & altered level of consciousness
   - midline thoracic or lumbar spinal pain or tenderness
   - Neurologic complaint (e.g. numbness or motor weakness) following trauma

SPINAL MOBILITY RESTRICTION (SMR) POLICY, CONT.

- Anatomic deformity of the spine following trauma
- High energy MOI, AND:
  - Alcohol/drug induced impairment
  - Inability to communicate
  - Distracting injury
- GSW to head or neck
- Stab wound to head/neck/back with neurologic deficit

2. Patients complaining of isolated cervical pain or tenderness following trauma, who have a GCS of 15, can be managed by application of a cervical collar and securing the patient firmly to the stretcher, without applying a LSB. This may include patients who are found ambulatory at the scene following the accident.

3. Immobilization on a LSB and CC application is not necessary following trauma when **ALL** of the following conditions are met:

   - Normal level of conscious (GCS=15)
   - No midline cervical, thoracic or lumbar spine tenderness or anatomic abnormality
   - No acute neurologic findings or complaints
   - No intoxication or drug-induced impairment
   - No significant distracting injury is present

These guidelines do not preclude use of LSB for extrication or moving the patient.

SPINAL MOBILITY RESTRICTION PROCEDURES

The following summary of SMR assumes that the ABCs and a distal circulation, motor, and sensory (CMS) exam have been assessed before and after splinting and treated accordingly.

Certain parts of this procedure may need to be modified in a critically injured patient whose airway, breathing, or circulation problems need to be treated immediately.

This summary also assumes that a patient is sitting upright in a car. The procedure will need to be modified if a patient is found in a different position or situation.

- Stabilize head in neutral, in-line position. (Do not release stabilization until the patient is completely secured to a LSB as described below, or until another EMT takes over. There should be no pulling or traction taken.)
- Measure and apply a properly-sized cervical collar.
- Apply extrication device, using a short backboard, long board, or other device. The technique used will depend on the equipment available and the patient's condition.
- Extricate, maintain spinal alignment with head and neck stabilization in a neutral, in-line position.
- Place patient on a long backboard and immobilize chest by crisscrossing over shoulders, across chest to the hips.
- Assess ventilation after tightening straps to ensure that respiratory effort is not impaired.

SPINAL MOBILITY RESTRICTION PROCEDURES, (CONT.)

- Immobilize the pelvis by crisscrossing or by strapping straight across. Use caution with pelvic or abdominal injuries.
- Put one strap across the thighs above the knees and one strap across the lower extremities. An additional strap may be placed across the feet.
- Stabilize the patient's head using a commercial immobilization device, rolled towels, or blankets. Secure patient's head to the backboard with two-inch adhesive tape across forehead.
- Check CMS before and after immobilization.
- Continue to monitor airway, breathing, circulation, vital signs, and level of consciousness.

SPLINTING

Appropriate splinting can reduce or minimize dislocation, motion, hemorrhage, swelling, and pain.

GENERAL PRINCIPLES

The following general principles apply to splinting:

- Remove or cut away clothing.
- Dress and bandage significant wounds, using a sterile dressing.
- Check CSM distal to injury before and after splinting.
- Immobilize joints above and below injured bones.
- For joint injuries, leave in place and immobilize the bone above and below the joint
- Realign angulated injuries only if there is neurovascular compromise (see page 55)
- Pad splints well.
- Elevate extremity after splinting, if possible.
- Monitor CMS after splinting.

GUIDELINES FOR SPECIFIC INJURIES

Realignment of Fractures with Neurovascular Compromise

- Attempt to realign open or closed fractures that are angulated with loss of distal pulses and pale/ cool distal skin only if ALS arrival will be delayed by >15 mins
- Realign by applying gentle, in-line, distal traction until pulse returns or increased resistance or excessive pain occurs.
- Splint extremity after realignment
- Realignment may sometimes be necessary to facilitate packaging for transport.
- Always Check and document distal CSM before and after realignment and/or splinting.

Dislocations/Sprains

SPLINTING (CONT.)

Splint dislocations or other joint injuries in the position found.

Exception: Loss of a distal pulse and pale/ cool distal skin and ALS arrival is delayed >15 mins. In that case, attempt to straighten into anatomical position until the pulse returns, excessive pain is felt, or resistance is encountered.

Support with blanket, pillow, or well-padded splint. Elevate the limb. Pack the injured area in ice or use an ice pack.

- **Pelvic Fractures**
  - Immobilization of these fractures can be accomplished by use of a bed sheet, disposable blanket, or a commercial device.
  - Fold sheet lengthwise into 8” to 14” width.
  - Place beneath patient; twist then wrap ends around patient, crossing over pelvic area.
  - Secure sheet with square knot, tape, or zip ties.
  - Secure the ends to the backboard.

TRACTION SPLINTING

A lower extremity traction splint stabilizes fractures of the femur. This reduces motion, hemorrhage, swelling, and pain. Traction splints are indicated in midshaft femoral fractures without involvement of the hip joint, knee, or lower leg.

General Guidelines For Applying A Traction Splint

SPLINTING (CONT.)

- At least two EMTs are required to apply a traction splint.
- Remove or cut away clothing. Dress and bandage significant wounds using a sterile dressing. Manually immobilize the injured extremity prior to dressing/bandaging. Check distal CMS before and after manipulation.

- Objectives:
  - **Determine SICK/NOT SICK**
  - Control Bleeding
  - Properly measure splint
  - Apply traction
  - Apply splint
  - Reassess CMS and vital signs

TASER DART REMOVAL AND CARE

The TASER dart usually penetrates the skin only a few millimeters. EMTs can safely remove a dart simply by pulling it out. The only exception is involvement of the eye, face, neck, breast or groin. In this case, leave the dart in place and transport the patient to the hospital for dart removal.

Consider scene safety to protect yourself and other rescuers from a potentially violent patient when a TASER has been used. You do not need to transport a person to the hospital based solely on TASER dart exposure. If a patient has no need for further medical evaluation, leave him or her in police custody.

This skill may be performed by EMTs or paramedic providers. (Depending on local protocol)

ALS Indicators

- Compromise in ABCs

BLS Indicators

- Taser dart imbedded in skin

BLS Care

- Patient must be in custody of police
- Restrain if needed
- Assure the scene is safe
- Wear PPE including gloves and eye protection—consider mask and gown if blood is present
- Remove TASER cartridge from gun or cut wires *before removing darts*
  - **Darts are a sharp hazard**—treat as contaminated needle
  - Dispose of darts in sharps container or TASER cartridge

TASER DART REMOVAL AND CARE

Removal Procedure

- DO **NOT** REMOVE darts if:
  - Patient is **not** under control
  - Eye, face, neck, breast or groin are involved—patient must be transported to hospital for dart removal in this case
- Grasp firmly with one hand and pull to remove, one dart at a time
- Reassess patient
- Consider medical or behavioral problems as the original cause of violent behavior
  - Drug/alcohol intoxication
  - Behavioral problems
  - Trauma, etc.
- Bandage wounds as appropriate
- Document situation and patient contact

Patient Disposition

- Release to law enforcement if indicated
- Transport with law enforcement support if:
  - Eye, face, neck, breast or groin are involved
  - ALS indicators
  - Law enforcement officer requires medical evaluation. Police protocol may require transport. This may be by PD or ambulance.
- Follow Patient Care Guidelines regarding restraint of aggressive or violent patients

TASER DART REMOVAL AND CARE

Burn Hazard

When a TASER is used in the presence of pepper spray propellant, there is a burn hazard. Electrical arcing from imperfect (but effective) dart contact can ignite the propellant. The resulting combustion may not be visible, but can lead to complaints of heat and burning. If a patient complains of heat or burning, evaluate for possible minor burns.

TEETH

Place avulsed/dislodged tooth/teeth in milk or patient saliva and transport.

TOURNIQUET

Indications

- A tourniquet may be used to control severe bleeding of an extremity when other means of bleeding control have failed.

Precautions

- Use proper PPE
- Incorrect application of a tourniquet can worsen bleeding or cause more tissue damage.

Procedure

- Attempt to control bleeding using direct pressure, pressure dressing and/or elevation
- If unable to control bleeding, apply the tourniquet as follows:
  - Expose wound by removing clothes on affected limb (when possible)
  - Position tourniquet webbing proximal/above the wound
    - At least 2 inches above wound (high & tight)
    - When clothing cannot be removed and wound cannot be visualized, apply the tourniquet at the most proximal point of that extremity (armpit or groin).
    - Tighten tourniquet by pulling out the slack in the webbing
    - Twist the handle (windlass) until bleeding has stopped
    - Secure the handle (windlass) in the triangle ring
    - Note the tourniquet application time on the tourniquet time label or on the patient's forehead
    - Re-assess frequently for bleeding control

Transport and Destina-

Transport Options

There are several options with regard to patient transport. You should consider:

Paramedic Transport : All "sick" patients and all patients with unstable vital signs should be transported by medic unit (when available). If no medic unit is available, begin transport and rendezvous. All patients transported by paramedics must go to a hospital.

BLS Transport: (via private ambulance or fire department BLS unit). Stable patients who require medical attention or oxygen during transport may be transported with a BLS vehicle. In deciding whether to call for private ambulance or transport via fire department BLS unit, departmental policies should be followed.

When requesting an ambulance for BLS transport, the default mode in King County for ambulance travel to the scene is non-emergency response unless specific written protocols require code-red response.

Private Vehicle Transport: Patients with minor alterations in vital signs and stable conditions not requiring oxygen may be advised that travel to the hospital or clinic via private vehicle is safe. The patient should not be the driver.

TRANSPORT AND DESTINATION

Taxi Transport: Some departments use a taxi voucher program for patients who travel to a clinic, urgent care clinic, free-standing emergency department, hospital based emergency department. These patients must meet the following criteria:

1. Paramedic care is NOT required
2. Patient is ambulatory
3. Patient has a non-urgent condition (clinically stable) including **low index of suspicion** for:
   a. Cardiac problem
   b. Stroke
   c. Abdominal aortic aneurysm
   d. GI bleed problems
   e. Major mechanism of injury
4. Patient must not have
   a. Need for a backboard
   b. Uncontrolled bleeding
   c. Uncontrolled pain
   d. Need for oxygen (except patient self administered oxygen)
5. The EMT considers a taxi to be an appropriate and safe method of transportation for the particular clinical problem.
6. Patient should be masked if there are respiratory symptoms.

TRANSPORT AND DESTINATION

Final Disposition Options

In deciding what is best for the patient you have **four disposition options:**

1. Leave at Scene
   - Generally, patients with normal vital signs and minor injuries or illness may be left at the scene. Always caution the patient to seek medical care (or call 911) if the condition should worsen.
2. Urgent Care Clinic
   - Selected patients may be transported to a clinic or urgent care clinic by fire department EMTs if they meet the following criteria:
     A. Paramedic care is NOT required
     B. Patient is ambulatory
     C. Patient has a non-urgent condition (clinically stable) including
        a. **Low index of suspicion** for:
           - Cardiac problem
           - Stroke
           - Abdominal aortic aneurysm
           - GI bleed problems
        b. Low index of suspicion for major mechanism of injury
     D. Patient must not have
        a. Need for a backboard
        b. Uncontrolled bleeding
        c. Uncontrolled pain
        d. Need for high flow oxygen

   For guidance regarding transport decisions EMTs may consult with paramedics or with emergency department personnel at the medical control hospital. The EMT must notify the destination facility of the clinical problem and the facility must agree to accept the patient.

TRANSPORT AND DESTINATION

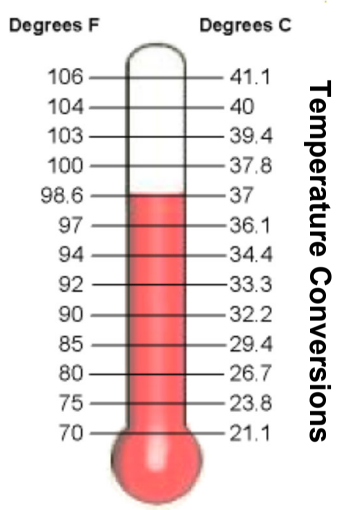
3. Free-standing Emergency Department Selected patients may be transported to a free-standing emergency department by EMTs if they meet the following criteria:
   - Paramedic care is NOT required
   - Patient has a non-urgent condition (clinically stable) including:
     A. Low index of suspicion for cardiac, stroke, abdominal aortic aneurysm, or GI bleed problems
     B. Low index of suspicion for major mechanism of injury
     C. Patient is willing to be transported to the free-standing emergency department.

   For transport decisions guidance EMTs may consult with paramedics or with emergency department personnel at the medical control hospital. If a free-standing emergency department destination is selected, that facility must be notified prior to transport and agree to accept the patient.
4. Hospital Emergency Department
   - All other patients requiring transportation.

Abbreviations

AVPU	Alert, Verbal, Pain, Unresponsive
CHF	Congestive Heart Failure
CMS	Circulation, Motor, Sensory
CNS	Central Nervous System
COPD	Chronic Obstructed Pulmonary Disease
DNAR	Do Not Attempt Resuscitation
ETT	Endotracheal Tube
FBAO	Foreign Body Airway Obstruction
IOS	Index Of Suspicion
LOC	Level Of Consciousness
MDI	Metered-Dose Inhaler
MGS	Medical Group Supervisor
MOI	Mechanism Of Injury
NOI	Nature Of Illness
NRM	Nonrebreathing Mask
NTG	Nitroglycerin
OPA	Oropharyngeal Airway
OPQRST	Onset, Provocation, Quality, Radiation, Severity, Time
POLST	Physician Orders for Life Sustaining Treatment
SAMPLE	Signs/Symptoms, Allergies, Medication, Past history, Last oral intake (meal), Events leading up to complaint

APPENDIX — NORMAL VITAL SIGNS BY AGE / TEMPERATURE CONVERSIONS



TEMPERATURE CONVERSIONS

Age	Respi-rations (breaths/ minute)	Pulse (beats/ minute)	Systolic Blood Pressure (mm Hg)
Newborn: 0 to 1 month	40 to 60	120 to 160	50 to 70
Infant: 1 month to 1 year	30 to 60	100 to 160	70 to 95
Toddler: 1 to 3 years	24 to 40	90 to 150	80 to 100
Preschool: 3 to 6 years	22 to 34	80 to 140	80 to 100
School age: 6 to 12 years	18 to 30	70 to 120	80 to 110
Adolescent: 12 to 18 yrs	12 to 16	60 to 100	90 to 140
Over 18 years	12 to 20	60 to 100	90 to 140

NORMAL VITAL SIGNS BY AGE

Organization	Address	Telephone
Bellevue Fire Department	450 110th Avenue NE Bellevue, WA 98004	(425) 452-6892 (Phone)
King County Medic One	7064 South 220th Street #9 Kent, WA 98032	(206) 296-8550 (Phone)
Redmond Fire Department	8450 - 161st Avenue NE Redmond, WA 98052	(425) 556-2200 (Phone)
Seattle Fire Department Medic One	325 Ninth Avenue Seattle, WA 98104	(206) 386-1483 (Phone)
Shoreline Fire Department	17525 Aurora Avenue N. Shoreline, WA 98133	(206) 533-6500 (Phone)
Vashon Island Fire & Rescue	10020 SW Bank Road Vashon, WA 98070-1150	(206) 463-2405 (Phone)

APPENDIX — TELEPHONE NUMBERS — ALS PROVIDERS

APPENDIX — TELEPHONE NUMBERS — AMBULANCE & COMMUNITY RESOURCES

Organization	Address	Telephone
American Medical Response	13075 Gateway Drive SE, Suite 100 Tukwila, WA 98168	(206) 444-4440 (Main) (206) 623-1111 (Dispatch) or 1-800-542-7701
Falck Northwest	6405 218th St. SW, Suite 201 Mountlake Terrace, WA 98043	(855)325-2569 (425)248-4100
Rural/Metro Ambulance	6405 – 218th Street SW Mt. Lake Terrace, WA 98043	(425) 672-1111 (Phone) 1-800-989-9993
Tri-Med Ambulance	18821 E. Valley Highway Kent, WA 98032	(206) 243-5622 (Phone)
KC Sheriffs Office Search & Rescue	7300 Perimeter Road S., Room 143 Seattle, WA 98108-3849	(206) 296-3853 (Phone) Special Operations
Crisis Clinic of King County	206-461-3222 (206) 461-8368 (Fax)	Mental health resource agency for concerned parents, relatives, etc.
Domestic Violence Hotlines - King County - Washington State - National		 (206) 205-5555 1-800-562-6025 1-800-799-7233

Agency	Phone Number	Reason to Call
King County 24 hour Crisis Line	(206) 461-3222 1-866-427-4747	Emotional, Physical or Drug Abuse, Suicide
King County EMS Division	(206) 296-4693	Administration of EMS services
King County EMS Fall Prevention Program	(206)369-5817	Free in-home fall patient assess-ments
Language Bank American Red Cross	(206) 323-2345	Foreign language translation
Medical Examiner – King County	(206) 731-3232	Report expected natural death; request death investigation
National Suicide Prevention Lifeline	1-800-273-8255	Suicide, emotional, family
Poison Center	1-800-222-1222	Ingestion of substances
Sexual Assault - King County Resource Center - 24 hr Resource Line	 (425) 226-5062 1-888-998-6423	Support for rape victims
Seattle Mental Health	(206) 302-2300	All mental health services including 24hr Crisis Response Service

DISPATCH CENTERS

Port of Seattle Police/Fire Communications 17801 International Blvd. South Seattle, WA 98158 Phone: (206) 787-5401 FAX: (206) 787-5804
Norcom Communications Center Phone: (425) 577-5656 FAX: (425) 577-5629
Enumclaw Police Department Phone: (360) 825-3505 FAX: (360) 825-0184
Seattle Fire Department Dispatch Phone: (206) 386-1493 FAX: (206) 684-7276
Valley Communications Center Phone: (253) 852-2121 FAX: (253) 372-1506

Hospital	City	Telephone	Door Code
Auburn Regional Medical Center	Auburn	253-333-2561	
Children's Hospital	Seattle	206-987-2222	
Enumclaw Regional Hospital	Enumclaw	360-802-3208	
Evergreen Hospital	Kirkland	425-899-1711	
Good Samaritan Hospital	Puyallup	253-697-4200	
Group Health - Central	Seattle	206-326-3223	
Group Health - Eastside	Bellevue	425-502-4120	
Harborview Medical Center	Seattle	206-744-3000	
Highline Community Hospital	Burien	206-431-5316	
Highline Comm. Hospital - Riverton	Tukwila	206-248-4730	
Mary Bridge Children's Hospital	Tacoma	253-403-1418	
Monroe Valley Hospital	Monroe	360-794-1402	
Northwest Hospital	Seattle	206-368-1765	
Overlake Hospital	Bellevue	425-688-5100	

Providence Hospital – Colby	Everett	425-261-3000	
Providence Hospital – Pacific	Everett	425-258-7555	
Snoqualmie Valley Hospital	Snoqualmie	425-831-2323	
St. Clare Hospital	Lakewood	253-985-6700	
St. Francis Hospital	Federal Way	253-944-7971	
St. Joseph Medical Center	Tacoma	253-426-6963	
Swedish Hospital	Edmonds	425-640-4682	
Swedish Hospital - Ballard	Seattle	206-781-6341	
Swedish Hospital - Central	Seattle	206-386-2573	
Swedish Hospital - Providence	Seattle	206-320-2111	
Tacoma General Hospital	Tacoma	253-403-1050	
UW Medical Center	Seattle	206-598-4000	
VA Puget Sound Health Center	Seattle	206-762-1010	
Valley Medical Center	Renton	425-228-3450	
Virginia Mason Hospital	Seattle	206-583-6433	

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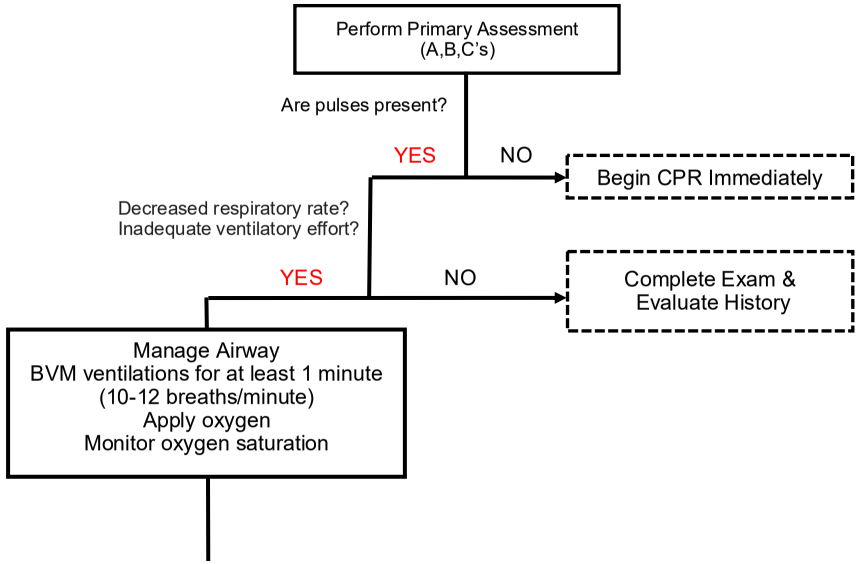
Intra-nasal Naloxone Algorithm

Use universal precautions to include eye protection, gloves and scene safety



Evaluate signs of Opioid Overdose

- **Slow Respirations (Patient's rate <8 per minute)**
- **Depressed LOC (Minimal or no response)**
- **Pinpoint Pupils**
- **High-risk clinical scene (Hx of use and /or drug paraphernalia**
- **No Hypoglycemia (BS >60mg/dl)**

<u>If positive signs of overdose, EMT may administer nasal Naloxone</u>

Open and assemble the Naloxone Kit
Insert soft tip atomizer (MAD) into one nostril
Deliver approximately half of the volume (1 ml)
Resume BVM ventilations
Monitor vital signs and patient status

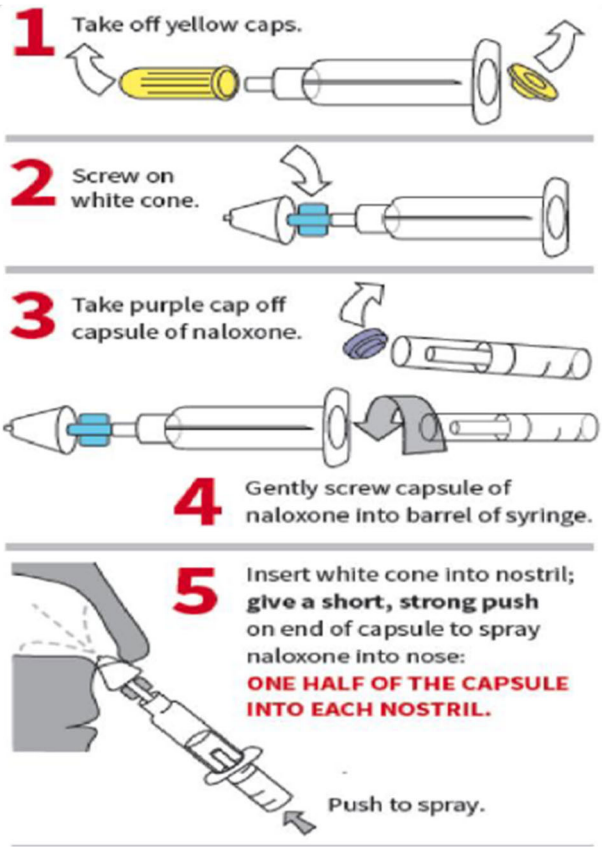
INTRA-NASAL NALOXONE ALGORITHM CONT.

Intra-nasal Naloxone Algorithm cont.

Peds (>10kg) dose is 1mg (consider ½ in ea. nostril)

Please Document:
1. Time of Naloxone administration
2. Vital signs, GCS, and O2 sat at 5 minutes after Naloxone administration
3. Time of Paramedic arrival
4. Patient disposition

Intra-nasal Naloxone Algorithm cont.



“Whoever saves one life has saved an entire world”

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www.emsonline.net

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Public Health
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