Seattle and King County

2023 EMT Patient Care Guidelines

Introduction

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

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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 ≥ 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 distress with patient in 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)
- Any HazMat burn

Cardiac

- Suspected ACS (p. 18)

ALS INDICATORS (CONT.)

CVA

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

Diabetic

- Diabetic that is unable to swallow
- Diabetic that fails to respond to oral glucose
- Suspected ketoacidosis
- Hypoglycemia with decreased LOC

Hypothermia

- Temperature <95 degrees oral or tympanic
- Decreased LOC
- Hypothermia with significant co-morbidity (e.g. elderly, illness, circumstances, trauma, alcohol, drugs)

LOC/Neuro

- GCS < or = 12
- Abnormal behavior associated with possible drug/alcohol overdose or trauma

Pulse / BP / RR

- Hypotension: systolic <90 in appropriate clinical setting
- Sustained tachycardia: >120 beats per minute in appropriate clinical setting (i.e. signs of shock)
- 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

ALS Indicators (Cont.)

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 births, breech or limb presentation, prolapsed cord, shoulder dystocia, postpartum hemorrhage
- Imminent birth or birth has just occurred
- Pregnancy 3rd trimester with abdominal trauma
- Pregnancy with significant trauma MOI.

Other

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

Sepsis

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

Seizure

- Multiple seizures
- Seizure still ongoing upon EMS arrival
- Postictal state with unstable airway
- Pregnant female
- Severe headache
- Seizures associated with concurrent trauma, drugs/alcohol, or hypoglycemia

ALS INDICATORS (CONT.)

Shock

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

Trauma

⇒ Mechanism

- Falls >2 times the height of the patient
- Struck and thrown >10 feet
- Any underwater rescue
- Significant intrusion, ejection, death in same vehicle

⇒ Injury pattern

- Penetrating injury to head, neck, eyes, chest or abdomen
- Skull deformity, suspected skull fracture
- Chest wall instability, deformity, or suspected flail chest
- Eviscerated abdominal contents
- Pelvic fracture, bilateral femur fracture
- Femur fracture with excessive swelling
- Open fracture except hands and feet
- Severe pain with significant MOI
- Suspected spinal cord injury with new motor or sensory deficit
- Crushed, degloved, mangled, or pulseless extremity
- Amputation (except fingers and toes)
- Active bleeding requiring a tourniquet

NOTES

ABDOMINAL COMPLAINTS

ALS Indicators

- Signs and symptoms of shock
- Unstable vital signs
- Positive postural changes (p. 94)
- 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)
- Seizure still ongoing on EMS arrival
- 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.)

BLS Care (cont.)

- Position patient in position of comfort if alert and airway is secure; if not, then use recovery position.
- Check blood glucose, pulse oximetry, temperature, FAST/LAMS
- If suspected opioid overdose consider naloxone
- Retain relevant drug containers and notes for transport with patient

Anaphylaxis / Allergy

ALS Indicators

- Known or suspected trigger plus one or more of the following symptoms:
  - Respiratory distress including oral swelling
  - Hypotension
  - Diffuse or progressive hives
- Use of epi 1mg/ml (1:1000) 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

- IM epi for anaphylaxis* (p. 116)
  - **Adult:** 0.3mg epi (1:1000, 1mg/ml)
  - **Child:** 0.15mg epi (1:1000, 1mg/ml)
- Oxygen as needed.
- Reassure patient.
- Remove stinger by scraping away from puncture site.
- Any patient who receives epi (pre or post EMS arrival) should be transported (mode of transport depends on clinical findings and symptoms) and evaluated in a hospital.

* “Check and Inject” IM epi administration requires specialized training authorized by the Medical Program Director

ASTHMA

ALS Indicators

- Decreased LOC
- Extreme anxiety and agitation
- Ashen color, cyanosis
- Failure to respond to repeated inhalers
- History of previous intubation related to asthma
- Unable to speak normally due to respiratory distress
- Labored respirations, regardless of rate, when found with other indicators
- Audible wheezing not improved with inhalers

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. (p. 123)
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Reassure patient
- Monitor pulse oximetry
- Monitor vital signs every five minutes.

Behavioral

ALS Indicators

- Agitated patient who cannot be safely assessed or treated or who requires 2 or more people for restraint (see acute behavioral disturbance)
- 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.
- Provide wound or trauma care if indicated.
- Consider hypoxia and hypoglycemia
- Consult law enforcement if decisional capacity appears to be impaired (p. 85)
- Use restraints when warranted (p. 88).
- Positional asphyxia and death can occur if patients are hogtied or restrained while prone. Restrain patients in a supine position.
- Incapacitated patients, people in crisis, or those with severe behavioral problems should be evaluated in an emergency room.
- If the patient does not require transport or medical evaluation but would benefit from mental health services, consider calling the King County Crisis and Commitment Services for 24/7 assistance (206) 436-3009.

BEHAVIORAL
ACUTE BEHAVIORAL DISTURBANCE

Definition
A state of mental and physiological excitement, characterized by extreme agitation, hostility, exceptional strength and endurance without apparent fatigue. Formerly referred to as “excited delirium.”

Causes
This condition is often associated with stimulant drug use and mental health disorders such as schizophrenia. A similar presentation may occur in cases of hypoglycemia, head trauma, metabolic disorders.

Presentation

- Bizarre, erratic, combative, uncooperative behavior
- Tachycardia, hypertension, hyperthermia
- Stripping off of clothing, or no clothing
- Paranoia, hallucinations, or panic
- Shouting or unintelligible noises

Care/Triage
- Suspected acute behavioral disturbance is an ALS response
- Care and disposition of these patients is informed by primary and secondary exam as well as glucose and pulse oximetry whenever possible.
- See p. 15 for BLS treatment guidelines

Concerns
The primary concern regarding these patients is the likelihood of harm to themselves or others by uncontrolled erratic behavior, as well as the physiological strain/stress from a severely agitated state. Unrecognized cases have led to in-custody deaths.

Chest Discomfort

ALS Indicators

- Chest discomfort of suspected myocardial ischemia (angina / MI)
- Altered LOC
- Use of nitroglycerin
- Unstable vital signs
- Signs and symptoms of shock
- 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
- Elderly patients, women, and persons with diabetes may present with atypical findings such as fatigue, weakness, shortness of breath, or syncope.

BLS Indicators

- Atypical chest pain in a patient <40 years old with no cardiac history and stable vital signs
- Minor traumatic chest pain

BLS Care

- Request paramedics if indicated.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Provide aspirin if indicated (p. 115).
- Assist patient with nitroglycerin if indicated (p. 124).
- Allow patient to assume position of comfort.
- Reassure patient.
- Monitor vital signs every 5 minutes.

CODE ACS

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.

Presentation of 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 or lightheadedness (not vertigo) without chest pain.
   c. Shortness of breath and difficulty breathing
   d. Unexplained anxiety, sensation of impending doom, weakness, or fatigue.
   e. Palpitations, cold sweat, or paleness.

Code ACS (cont.)

Additional Procedures

1. If the patient has his/her own nitroglycerin and meets the criteria for administration, assist the patient with nitroglycerin (p. 124).
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 total 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)
- Unstable vital signs

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.
- Remove wet clothing and cover with blankets.
- Position of comfort. If decreased LOC, place in recovery position.
- Warm patient in a warm environment (aid unit).
- Commercial heat packs may be placed in the groin and armpit as appropriate. Avoid direct skin contact.
- Monitor patient's vital signs, use ECG monitor if authorized, repeat temperature measurements.

BLS Care (Profound bradycardia with a pulse)

- If pulse is present, withhold CPR regardless of rate or blood pressure.
- If normal breathing is present, assume there is cerebral perfusion and withhold CPR.

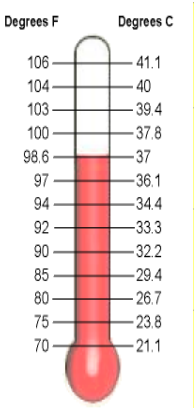
COLD-RELATED (CONT.)

BLS Care (Hypothermic cardiac arrest)

- If no pulse is detected after one full minute, begin CPR.
- If AED states “shock indicated,” follow cardiac arrest protocol.

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.
- In general, do not rewarm frozen tissue.
- Rewarming may be considered if transport time will exceed 2 hours. Obtain medical direction prior to initiating rewarming.



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
- 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.
- Obtain pulse oximetry
- Monitor vital signs every 5 minutes depending on patient's condition.

Diabetes

ALS Indicators

- Blood glucose <60 and patient unable to swallow
- Altered LOC
- Failure to respond to oral glucose with continued glucose <60 despite repeated treatment.
- Suspected diabetic ketoacidosis: glucometry reading >400 or “high” with associated symptoms
- Seizures

BLS Indicators

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

BLS Care

- Request paramedics if indicated.
- Check blood glucose.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- If hypoglycemic and patient is able to swallow, position upright and give oral glucose. (p. 118)
- If hypoglycemic, and patient is **unable to swallow**, position on side, maintain a patent airway, 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.

DIABETES (CONT.)

Signs and symptoms of hyperglycemia (including ketoacidosis/diabetic coma)

- Onset generally days to weeks
- High blood glucose
  - Greater than 200 mg/dl (mild hyperglycemia)
  - Greater than 300 mg/dl (moderate hyperglycemia)
  - Greater than 400 mg/dl (severe hyperglycemia)
- Altered LOC (restless to coma)
- Hypotension (systolic BP less than 90 mmHg)
- Vomiting
- Recent hx of polydipsia, polyuria, polyphagia
- Sweet, fruity breath
- Kussmaul breathing (deep, rapid breaths)

Signs and Symptoms of Hypoglycemia

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

- Onset typically hours
- Low blood glucose (usually less than 60 mg/dl)
- Altered LOC
- Irritability, confusion, seizures or coma

DIABETES: GLUCOMETRY

Indications For Use

- Anytime an EMT encounters a patient with an altered level of consciousness. This may include patients with the following:
  - Suspected diabetic-related problem
  - Signs and symptoms of stroke
  - Suspicion of drug or alcohol intoxication
- Anytime 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.

DIABETES: AFTERCARE

After treatment with oral glucose, patients on insulin may be safely left at home when **ALL FOUR** of the following conditions are met:

1. Patient is awake and alert with stable vital signs.
2. Patient is able to eat and drink normally
3. Blood glucose is > 60mg/dl
4. A responsible person should remain with the patient.

Patients left at home should be encouraged to eat a full meal and contact their physician.

Patients on oral hypoglycemic agents who are initially found to be hypoglycemic and whose blood sugar has been corrected should be strongly advised to be transported for further evaluation. This is due to the high likelihood of repeated hypoglycemia secondary to long oral medication half-life. Oral hypoglycemic agents include: Diabinese, Glipizide, Prandin, Actos, amongst others.

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

HEAT-RELATED

ALS Indicators

- Decreased/altered LOC
- Hot, dry skin in the presence of elevated temperature
- Signs of shock
- 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. Limit direct skin contact.
- Keep skin wet by applying cool water with sponge or wet towels.
- Fan aggressively to encourage evaporative cooling
- 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).

OBGYN: Obstetrics

ALS Indicators

- Imminent birth or birth has just occurred
- Decreased/altered LOC of mother/newborn baby
- Suspected pre-eclampsia or eclampsia (can occur after about 20 weeks of pregnancy up to 6 weeks post-partum)
  - Abnormal blood pressure (greater than 140 mmHg systolic) with neurologic symptoms
  - Seizures
- Excessive vaginal bleeding
- Suspected abruption (severe abdominal pain)
- Any abdominal trauma to mother during third trimester
- Trauma with significant MOI
- Breech or limb presentation
- Prolapsed cord
- Shoulder dystocia
- Uncontrolled postpartum hemorrhage
- Dispatch to birthing center/midwife

BLS Indicators

- Early pregnancy, pain or minor bleeding with stable vital signs
- Uncomplicated labor with no concern for imminent birth

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.

OBGYN: OBSTETRICS (CONT.)

- Nothing by mouth.
- Allow patient to choose position of comfort, keeping in mind that supine hypotension may occur if patient is flat on back. If possible, 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).
- Delivery requires multiple care providers
- 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 PPE (gloves, gown, 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.
- After delivery of the head, provide gentle downward traction to facilitate delivery of the anterior shoulder. When the anterior shoulder appears, apply gentle upward traction to facilitate the delivery of the posterior shoulder, after which the rest of the body should deliver.
  Caution: *Babies are slippery as they exit the birth canal*

OBGYN: Obstetrics (cont.)

- Suction the baby's mouth and nostrils **only if** baby is not breathing or is having respiratory distress.
- Dry the newborn
- Wrap baby in warm blanket.
- Place baby on its side to facilitate drainage and place on mother's chest.
- 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.
- Note the time of birth, APGAR score at 1 and 5 min, 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 if 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.

APGAR 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

OBGYN: Gynecology

ALS Indicators

- Decreased/altered LOC
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting
- Sustained tachycardia
- Severe, unremitting pelvic pain
- Excessive vaginal bleeding
- Suspected ectopic pregnancy with signs of shock

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.
- Provide supplemental oxygen if indicated.
- 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 p. 35)
- Fever/infection with low index of suspicion

BLS Care

- Use **Pediatric Assessment Triangle**. (p. 97)
- 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.

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, not focal. The following are general guidelines for patient management:

- 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

- Labored respirations regardless of rate when found with other indicators
- Unable to speak normally due to resp. distress
- Audible wheezing, rales
- Decreased LOC
- Extreme anxiety or agitation
- Tripod positioning
- Suspected anaphylaxis-related
- Ashen color, cyanosis, retractions
- Respirations greater than 30 per minute
- Use of EMS/healthcare provider epi

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
- Reassure patient
- Assist patient with his or her medications.
- Administer epinephrine if indicated for anaphylaxis (p. 116).
- Monitor vital signs every 5 minutes depending on patient's condition.

Seizures

ALS Indicators

- Multiple seizures (status epilepticus)
- Seizure still ongoing upon EMS arrival
- Seizure due to hypoglycemia
- Seizure due to hypoxia
- Seizure following head trauma
- Drug or alcohol associated seizures
- Postictal state with unstable airway

BLS Indicators

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

BLS 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.
- Apply oxygen as needed
- Check blood sugar
- Obtain pulse oximetry after seizure
- For suspected febrile seizure in a pediatric patient see p. 35

SEPSIS

Sepsis is a systemic infection that causes high mortality.

In the presence of a suspected infection, consider sepsis if 2 or more of the following signs are present:

- Altered mental status
- Hot to the touch (fever)
- HR > 90
- RR > 20
- HR > Systolic BP

ALS Indicators

- Decreased LOC
- Unstable airway
- Respiratory distress
- Respirations greater than 30 per minute
- Signs and symptoms of shock
- Positive postural vital signs (p. 94)

BLS indicators

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

BLS Care

- 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

Signs and symptoms

- Numbness of weakness of face, arm, or leg, especially unilateral
- Altered mental status; confusion, difficulty in speaking or understanding
- Visual disturbances
- Difficulty walking, dizziness, loss of balance or coordination
- Severe headache

ALS Indicators

- LAMS 4 or 5
- Unconscious or decreased LOC
- Airway or respiratory concerns
- Severe hypertension (SBP>200 or DBP >110 with neurologic signs)
- Seizures
- Severe headache
- Stroke symptoms worsening over time

BLS Indicators

- LAMS 3 or less
- Stable vital signs and presentation
- Airway patent

BLS Care

- If you suspect a stroke, perform a FAST exam
- If FAST is positive, determine LAMS
- Activate Code Stroke
- Determine last known well (symptom onset)
- Obtain family contact info
- Record medications and allergies
- Request ALS if indicated

STROKE PLAN

BLS Care (cont.)

- Position patient upright
- Provide for airway, ventilation, oxygenation support as appropriate
- Protect paralyzed limbs
- Monitor vital signs including GCS, glucometry, pulse oximetry
- Scene time should be limited to <15 minutes when possible
- BLS transport is permitted code red if transport time > 15 min

Stroke Plan

When a stroke is suspected, rapid prehospital evaluation and treatment as well as hospital notification allow for optimal patient care. Stroke patients may be candidates for thrombolytic ("clot busting") therapy such as tPA, or endovascular clot retrieval. Time is of the essence for these treatments to be effective. For the BLS patient (generally LAMS 3 or less), EMTs should expedite transport to a local hospital after code stroke notification.

Patients with LAMS 4 or 5 may have suffered a large vessel occlusion (LVO) and may benefit from ALS transport to a hospital capable of endovascular clot retrieval. Code stroke notification, whether BLS or ALS, consists of the following information:

- Incoming stroke patient, including age, gender, LAMS score
- Time of last known well
- Presentation and vital signs
- ETA

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: LAMS EXAM

LAMS

1) Assess **LAMS** score:

- **Facial droop** ⟶
  Absent=0 Present=1
- **Arm drift** ⟶
  Absent=0 Drift=1 Falls rapidly=2
- **Grip strength** ⟶
  Normal=0 Weak=1 None=2

Total LAMS Score = 0 - 5

IF:

⟹ Last known well ≤ 24 hrs AND

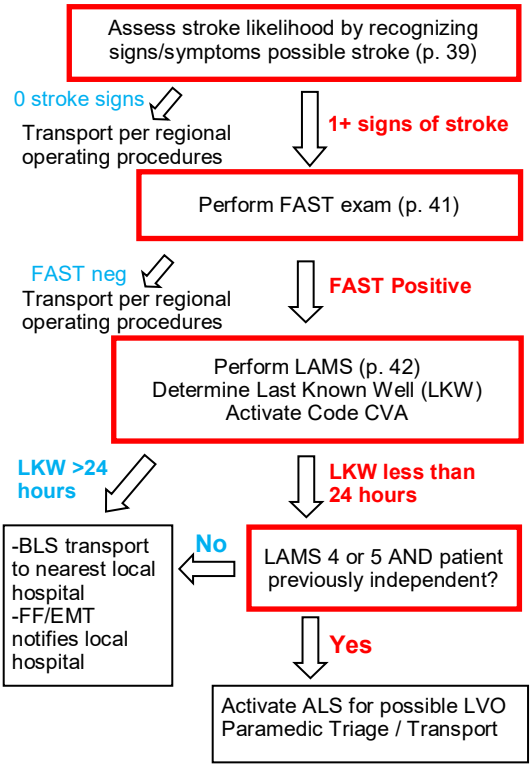
⟹ Patient previously independent* AND

⟹ LAMS score 4 or 5

THEN:
Activate ALS

**exclude patients with chronic illnesses that make them bedbound, e.g. advanced dementia or other illness that require substantial assistance for basic life activities*

King County Stroke Algorithm



For all suspected stroke patients, please record: LAMS, LKW, GCS, glucometry, oximetry, family contact, patient medications

BANDAGING AND DRESSING

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

- Remove community-placed dressings unless they are actively soaking through with blood
- Control active external bleeding (p. 45)
- Secure the dressing with a bandage that is snug and provides direct pressure over the injury, and 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 fingers or toes exposed.
- Check circulation by feeling for a distal pulse or checking capillary refill.
- Immobilize the injured extremity if appropriate

BLEEDING CONTROL

ACTIVE 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.
- For severe uncontrolled extremity bleeding apply a tourniquet (p. 46)
- For severe uncontrolled bleeding in a junctional area (where extremities join the torso) consider packing the wound (p. 47)
- For penetrating injuries to the chest and neck apply an occlusive dressing / chest seal
- For penetrating injuries to the abdomen apply trauma dressing or occlusive dressing

EVISCERATED ABDOMINAL CONTENTS

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

AMPUTATION

- Wrap amputated parts in sterile dressings and place in a watertight container or bag.
- Place the container on ice or chemical cold pack; Do not submerge the amputated part in water or place directly on ice.
- Transport the amputated part with the patient to the appropriate trauma center (HMC).

BLEEDING CONTROL: TOURNIQUET

TOURNIQUET APPLICATION

Most hemorrhage control can be accomplished with standard bleeding control practices. Application of a tourniquet is indicated for uncontrolled life-threatening extremity bleeding. Follow manufacture guidelines for use of commercial tourniquets (SWAT-T, SOF-T, CAT, etc.).

General procedure for windlass style tourniquets:

- Continue to apply direct pressure to injury site if possible during tourniquet application.
- Place the tourniquet on the proximal aspect of the extremity (high and tight).
- Pull all slack from tourniquet strap
- Turn with windlass until bleeding stops and distal pulse is no longer detected
- A second tourniquet may be applied if bleeding cannot be controlled
- Secure windlass and record time of application on visible aspect of patient
- Bandage the wound site

Caution: Regardless of type, an improperly applied tourniquet can actually increase bleeding by stopping venous flow but not arterial flow. Reevaluate tourniquet application periodically for continued efficacy.

BLEEDING CONTROL

TOURNIQUET CONVERSION (REMOVAL)

If original tourniquet was applied by a non-EMS rescuer but not ultimately necessary, the tourniquet may be evaluated for possible conversion (removal).

- Confirm injury is not currently bleeding
- Loosely place EMS tourniquet proximal (if possible) to original tourniquet
- Slowly release original tourniquet and evaluate for bleeding. If major bleeding occurs, tighten EMS tourniquet until bleeding stops.
- If bleeding does not restart or is minimal, keep EMS tourniquet loosely in place and dress the wound appropriately.
- Reevaluate wound frequently

Contraindications for removal:

- Tourniquet has been in place for >2hrs
- Tourniquet was applied for an amputation (more than finger or toe)
- Patient is unstable or in shock
- Inability to monitor wound enroute to hospital

WOUND PACKING

Indicated for life threatening bleeding in the junctional areas (where extremities join the torso).

- Clean out the wound cavity (be cautious of sharp bone fragments) to allow the hemostatic gauze to be in contact with the site of hemorrhage
- Locate and apply digital pressure to the damaged vasculature
- Tightly pack wound cavity with hemostatic gauze first if available (regular gauze is acceptable)
- Press down firmly on wound pack for ~ 3 min
- Dress wound pack with pressure dressing to maintain constant pressure over the site

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

BLS Indicators

- All other burns

BLS Care

- Remove rings, watches, bracelets, etc., 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 (i.e. commercial burn sheet)
- **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
- Cover with dry dressing (i.e. commercial burn sheet).

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

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.
- Provide bleeding control and airway management
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Consider occlusive dressings for penetrating neck injuries
- Provide neutral, in-line cervical stabilization with proper sized cervical collar and padding (p. 51, 102).
- Bandage as necessary.
- Monitor vital signs and neurologic status.

Special Instructions For Suspected Cervical Injury

- **Suspected cervical injury with non-alignment**
  Make 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. If unable to realign then secure in the original position.

- **Helmet Removal**
  As long as the airway is 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 guidelines (p. 102).

ORTHOPEDIC

ALS Indicators

- Decreased/altered LOC
- Signs or symptoms of shock
- 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
- Suspected spinal cord injury with new motor or sensory deficit
- Severe, unremitting pain

BLS Indicators

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

BLS Care

- Request paramedics if indicated.
- Perform spinal mobility restriction if indicated
- Control major bleeding (p. 45)
- Splint injury as appropriate (p. 106)
- Gently support injured part and allow patient to choose position of comfort if appropriate.
- 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
- Apply cold/ice pack to injured part (for closed tissue injury only).
- Monitor patient's vital signs every 5 minutes.
- Attempt realignment *only* if neurovascular compromise exists

Falls In Elderly Patients

In addition to consideration of orthopedic injuries, consider head trauma and possible CNS bleeding, *especially if the patient is receiving anti-coagulants (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
- 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
- Soft tissue injuries, with bleeding controlled by direct pressure

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.
- Monitor vital signs.
- Cervical spine protection, if indicated.
- Remove debris such as glass, splinters, or gravel prior to bandaging
- Large, deeply imbedded fragments or projectiles should be secured in place and not removed

NOTES

NOTES

AIRWAY MANAGEMENT

OROPHARYNGEAL AIRWAY (OPA)

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.

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.
- 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.

NASOPHARYNGEAL AIRWAY (NPA)

Nasopharyngeal airway devices are typically used in patients who have an intact gag reflex or for whom an OPA cannot be used (angioedema, trismus, other factors). They are contraindicated in trauma patients.

To size a nasopharyngeal airway:

- Choose the correct size by measuring from the earlobe to the tip of the patients nose. Apply lubricant prior to insertion.

AIRWAY MANAGEMENT

SUCTIONING

A large bore (Yankauer) suction tip is preferred for most suctioning. If the holes on the suction tip get plugged repeatedly, remove the tip and use the tubing.

To suction with a large bore (Yankauer) tip:

- Measure the same as for an oropharyngeal airway—approximately from the corner of the mouth to the ear lobe.
- Do not suction while inserting; suction only after the Yankauer (or similar device) is in place and as you withdraw.
- Suction from side to side, 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 correct positioning to maintain an open airway. If personnel are available, 2 hand BVM technique provides superior ventilation and should be performed.

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.

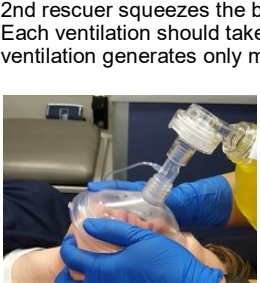
One hand BVM technique

- 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.
- Each ventilation should take one second. Correct ventilation generates only modest chest rise.

BAG-VALVE-MASK (CONT.)

Two hand BVM technique

- Kneel with a knee on each side of the patient's head.
- Place the mask over the face and hold in position with both hands, thumbs pointed down toward the ankles.
- Place fingers under the jaw and create a seal by lifting the patient face to the mask while simultaneously pushing down on the mask
- 2nd rescuer squeezes the bag to ventilate
- Each ventilation should take one second. Correct ventilation generates only modest chest rise



KING COUNTY EMERGENCY MEDICAL SERVICES
CARDIAC ARREST IN ADULTS AND ADOLESCENTS[A]
FOR PHILIPS AED AGENCIES

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

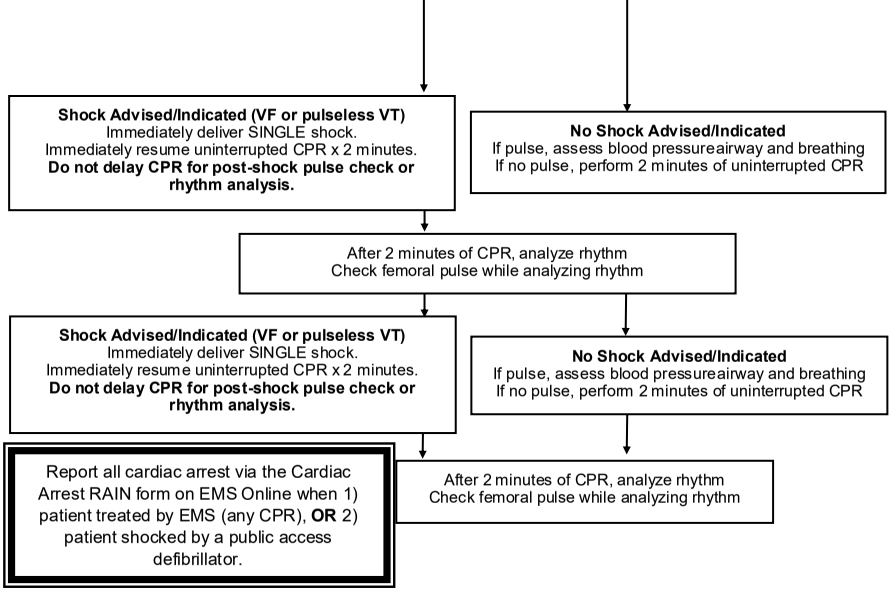
In the patient who is unconscious/unresponsive, not breathing normally and in whom no pulse is detected[C,] immediately perform chest compressions[D,] while turning on and attach defibrillator (AED). Once AED is applied, give verbal report and count compressions. At completion of current set of 30 compressions, 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]

Begin CAB. If unconscious/unresponsive, not breathing normally and no pulse immediately perform chest compressions, turn on and attach defibrillator. Complete 30 compressions; analyze 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
Immediately begin chest compression.
Perform 2 minutes of uninterrupted CPR
Do not delay CPR for pulse check

After 2 minutes of CPR, Analyze rhythm
Check femoral pulse while analyzing rhythm



CARDIAC ARREST (CONT.)

KING COUNTY EMERGENCY MEDICAL SERVICES
CARDIAC ARREST IN ADULTS AND ADOLESCENTS[A]
FOR PHYSIO-CONTROL AED AGENCIES

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

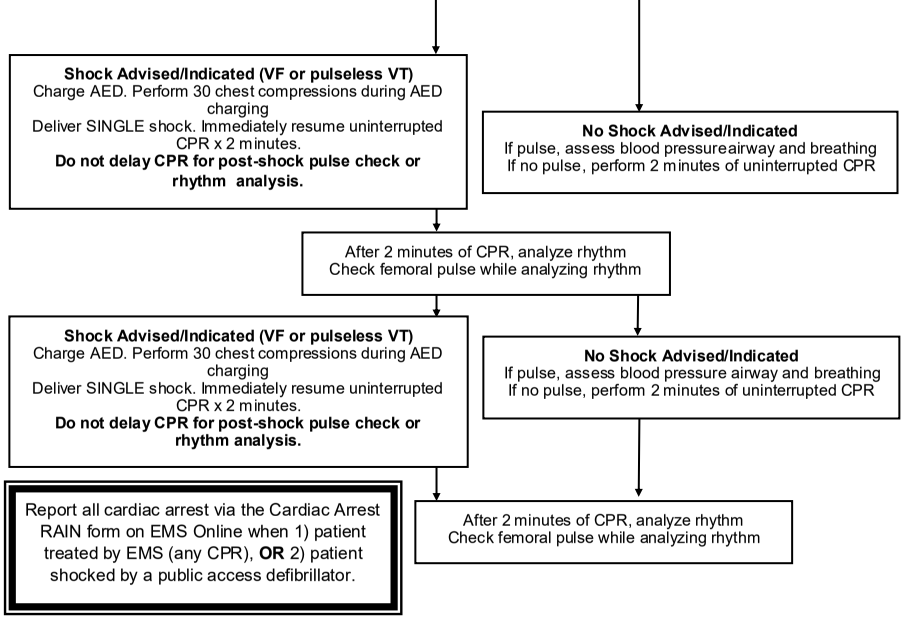
In the patient who is unconscious/unresponsive, not breathing normally and in whom no pulse is detected,[C] immediately perform chest compressions,[D] while turning on and attach defibrillator (AED). Once AED is applied, give verbal report and count compressions. At completion of current set of 30 compressions, 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]

Begin CAB. If unconscious/unresponsive, not breathing normally and no pulse immediately perform chest compressions, turn on and attach defibrillator. Complete 30 compressions; analyze 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
Immediately begin chest compression.
Perform 2 minutes of uninterrupted CPR
Do not delay CPR for pulse check

After 2 minutes of CPR, Analyze rhythm
Check femoral pulse while analyzing rhythm



CARDIAC ARREST (CONT.)

CARDIAC ARREST (CONT.)

A. Adolescence (~age 13) is defined as the presence of secondary sexual characteristics (development of axillary hair in males and breast tissue in females).

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 on the femoral pulse (or carotid pulse if femoral pulse is inaccessible) during CPR. This enables 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 other time that the protocol calls for a pulse check.

CARDIAC ARREST (CONT.)

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 age 1-adolescence (absence of secondary sexual characteristics); 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 any time 3 consecutive “no shocks” are advised and there is no pulse, continue CPR without interruption until medics arrive.
- If a public access defibrillator (PAD) is attached to an adult or adolescent prior to your arrival, you may use it.
- 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

VERIFY CARDIAC ARREST

APPLY LP500

BEGIN CPR 10:1 @ 100 PER MIN

ANALYZE AS SOON AS POSSIBLE

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

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

MANUEVER	ADULT Adolescent (~age 13) and older
RECOGNITION	Unresponsive (for all ages)
	No breathing or no normal breathing (i.e., 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 enroute
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

MANUEVER	CHILD 1 year to Adolescent (~age 13)	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 enroute	
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 indicated	

CPR For Newborn

Maneuver	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 indicated

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 form of a POLST. (Portable Orders for Life-Sustaining Treatment) This is based on patient's wishes.
- "Compelling reasons" to withhold resuscitation can be invoked when written information is not available, yet the situation suggests 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.

Sometimes patient wishes cannot be readily determined. When in doubt, initiate resuscitation.

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 treat" or "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.
- Provide oxygen using a cannula or non-rebreather.
- Control any bleeding.
- Provide emotional support to patient and family.
- Contact hospice if involved.
- Contact the patient's private physician.
- Paramedics may be called if additional judgment or support is needed.

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

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

- Use of medical helicopters may be considered for any critically ill or injured patient requiring care at a facility outside of the local area when transport times are likely to be excessive due to traffic or distance.
- A medic unit must be dispatched any time 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.

MONITORING: ECG

ECG monitoring may be performed by EMTs trained in its use. Indications may include: chest pain, possible arrhythmia, syncope, hypotension, palpitations.

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:

- Activate 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 POSITIONS 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.

MULTI-CASUALTY INCIDENT (CONT.)

TREATMENT TEAM LEADER

Major Responsibilities:

- 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

AVPU	
A	**Alert** – The patient's eyes 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 are not spontaneously open. 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.

Eye Response		Best Verbal Response		Best Motor Response	
Spontaneously open	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

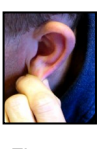
Noxious Stimuli

The purpose of applying a noxious stimulus is to help determine the patient's level of consciousness.

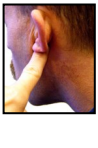
Indications

Any patient with decreased LOC.
The only two approved methods of delivering noxious stimuli are:

- Firm earlobe pressure



- Firm pressure behind ear lobe



Apply firm pressure to the earlobe or behind the earlobe for up to five seconds. This stimulation may be applied once or twice during the initial evaluation and infrequently thereafter, if monitoring of the level of consciousness is necessary.

Prolonged or excessive application of noxious stimuli, chemical stimuli, sternal rubs or eyeball pressure are prohibited 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 regardless of the pulse oximetry:
  - Shock
  - Complicated labor
  - Newborn with persistent cyanosis or respiratory distress
  - Suspected decompression illness
  - Mismatch between the oximetry and clinical signs—for example respiratory distress 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.

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

OXYGEN DELIVERY (CONT.)

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, pulse oximetry, and level of consciousness as a guide. When using a non-rebreather mask, remember to use a liter flow that is high enough to keep the reservoir 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 drowning. To assist 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.

OXYGEN DELIVERY (CONT.)

UNCONSCIOUS PATIENT WITH SUFFICIENT RESPIRATORY EFFORT

Oxygen delivery may range from low-flow with a nasal cannula to high-flow with a non-rebreather mask. Patient's level of consciousness and vital signs (especially respiratory rate and effort), color, pulse oximetry, 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 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. If the patient has signs of hypoxia, switch to a non-rebreather.

Oxygen Delivery (cont.)

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

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 non-rebreather mask approximately two inches away from the patient's face.

Oral Trauma

Teeth:

Place avulsed/dislodged tooth/teeth in milk or patient saliva (in their mouth, if no risk of choking) and transport.

PATIENT POSITIONING

Proper positioning can reduce pain, and improve physiological function and sense of well-being.

RECOVERY POSITION

This position is used for non-trauma patients who are unresponsive and breathing adequately. It protects the airway from vomit and secretions. The patient should be placed on their side in a stable manner, with the head dependent to allow drainage. Ensure good visualization of, and access to, the airway.

SHOCK POSITION

The patient is supine with feet elevated. Patients with severe respiratory distress may not tolerate this.

SEATED POSITION

Patients in respiratory distress should be placed in an upright position if possible. Otherwise patients should be placed in a semi-reclining (semi-fowlers) position as comfort allows. Additional pillows behind the head and knees may improve comfort.

Patient Refusals

The following information summarizes King County guidelines for care of the non-compliant patient:

To refuse care against medical advice (AMA), a patient must have decisional capacity.
The following patients do NOT meet criteria for decisional capacity and may not decline care through the AMA process:

- Minor (age less than 18 yrs and not an emancipated minor)
- Physically or cognitively impaired by use of alcohol and / or drugs
- Suspected physiological derangement affecting decisional capacity (brain trauma, hypoxia, hypoglycemia, etc.)
- Medical disease such as dementia or mental illness that impairs a patient's decision-making
- Patient with suicide attempt or concern of suicidal intent

Patients who do NOT have decisional capacity cannot invoke AMA and refuse care.
EMS should assess risk before engaging the patient.
Scene safety
Risk assessment

- Is the patient harming or threatening to harm other people?
- Is the person threatening to harm themselves?
- Are weapons involved?
- Do bystanders present a threat to the patient or responders?
- Does the physical environment present a risk?

PATIENT REFUSALS (CONT.)

If the assessment DOES suggest risk:

- Do not engage the patient
- Remain at a distance
- Request law enforcement
- Activate additional resources if appropriate

If the assessment DOES NOT suggest risk:

- Attempt engagement by establishing rapport
- Use active listening and clear, non-threatening communication
- If patient does not comply with assessment or care, request law enforcement
- Consider contacting a battalion chief or supervisor if appropriate
- Consider involving family, friends, or other public safety resources
- If patient remains non-compliant, discuss options with other on-scene personnel
- EMS cannot care for patient if:
  - Patient cannot be safely engaged
  - Escalated efforts to achieve compliance is deemed unsafe
- Communicate plan to leave the scene with other engaged entities, if possible.
- Consider contacting King County Crisis and Commitment Services for guidance and assistance (206) 436-3009.
- If EMS has already engaged patient, and they subsequently pose a direct threat to themselves or others, physical or medical means may be used to manage the patient (see p. 88 for restraint protocols)
- Provide full documentation

Patient Refusals (cont.)

Patients who DO have decisional capacity may refuse care against medical advice (AMA).
Use ESO for documentation and patient signature.

Documentation
When engaging a non-compliant patient, use standard ESO patient care information but include the following additional information:

- Assessment of decisional capacity
- Refusal (attempts to achieve compliance and patient's refusal)
- Scene and circumstance risk assessment and safety
- Resources (who was activated, including law enforcement and community resources)

PATIENT RESTRAINT

Restraint is the prevention of patient movement without consent.

Generally, restraints are used in the prehospital environment whenever dangerous behavior 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. Consider the possibility the patient is experiencing an acute behavioral disturbance (p. 16).

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 may reduce anxiety. An example would be a statement such as "We want to help you."
- **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 with the patient continuously. Once a decision is made to restrain, act quickly. Use only the force

PATIENT RESTRAINT (CONT.)

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 NRB 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 can prevent transmission of many infectious diseases. Wash hands before and after: patient contact, checking or cleaning equipment, eating or drinking or handling food, using the restroom.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Gloves and **eye protection** must be worn for every patient contact. Mask use is dictated by current medical director guidelines.

SUSPECTED INFECTIOUS DISEASE

Dispatchers will notify units of infectious symptoms: fever, cough, known infection. PPE will depend on index of suspicion and potential route of transmission.

- **Full PPE (MEGG)**
  - **M**ask*, **E**ye Protection, **G**owns, **G**loves
  - Mask the patient (if possible)
- **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 cuff, stethoscope, radios, tablets, etc.)
  - Wash hands before leaving apparatus floor.

*fit tested masks may be appropriate in some situations

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.

An exposure only occurs if:

- There is a needlestick 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 your department's exposure control policy.

Other Exposures

Occupational exposures to other infectious pathogens may occur. This may include TB, bacterial meningitis, measles, or possibly a new disease. Hospital diagnosis of the patient usually initiates the follow-up process, with EMS personnel notified by their infection control officer, MSO, or hospital staff. This notification will include additional information on testing, post-exposure prophylaxis if appropriate, or other actions. Any questions should be directed to your infection control officer via the chain of command.

PHYSICAL ABUSE AND NEGLECT OF CHILDREN AND VULNERABLE ADULTS

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
- Injury inconsistent with expected developmental ability
- 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 or not taking action to prevent harm or pain
- Failure to provide safe living conditions

Physical Abuse and Neglect of Children and Vulnerable Adults (cont.)

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

By Washington state law, fire fighters, paramedics, and EMTs are mandatory reporters.

Report abuse/neglect of children and vulnerable adults to DSHS:
1-866-363-4276 (1-866-ENDHARM)

Involve local police in all suspicious cases.

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 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 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

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

Pulse Oximetry

Indications For Use

Pulse oximetry may be used at any time the EMT believes this may be helpful. This may include patients with the following:

- Shortness of breath
- Chest pain
- Altered level of consciousness
- Pregnancy/active labor
- Trauma
- Any oxygen use

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.

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

NOTE

Pulse oximetry is inaccurate in the following clinical situations:

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

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 a triad 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
Distractibility	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

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

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

Short Report to incoming units

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 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

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

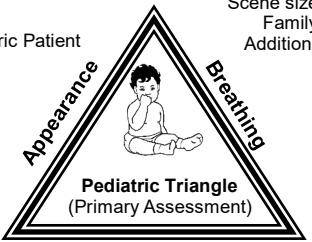
Reassessment

*MOI—Mechanism of Injury

SICK/NOT SICK
Medical

Rapid Pediatric Patient Assessment

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



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

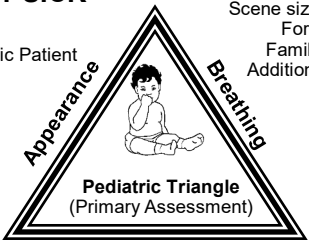
Request ALS. Short Report to incoming units

*NOI - Nature of Illness

SICK/NOT SICK Trauma

Rapid Pediatric Patient Assessment

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



Circulation/Skin Color

DECIDE

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

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 (LSB and CC):

Immobilize patients with a LSB (or similar spinal mobility restriction device) 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 weakness) following trauma

SPINAL MOBILITY RESTRICTION (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

Clinical Indications for CC only:

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.

Clinical Indications for no LSB or CC:

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 (CONT.)

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.
- If injuries preclude the use of a c-collar (mandible or clavicle fracture) a rolled towel "horse collar" or similar technique may be considered.
- 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.

SPINAL MOBILITY RESTRICTION (CONT.)

- Assess ventilation after tightening straps to ensure that respiratory effort is not impaired.
- Immobilize the pelvis by crisscrossing or by strapping straight across. Use caution with pelvic or abdominal injuries.
- Place 1-2 straps 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 CMS 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
- Pad splints well.
- Elevate extremity after splinting, if possible.
- Monitor CMS after splinting.

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

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 CMS before and after realignment and/or splinting.

SPLINTING (CONT.)

Multiple extremity fractures

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

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 or tape.

Femur fractures

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, open or closed, without involvement of the knee or lower leg.

- At least two EMTs are required to apply a traction splint.
- Remove or cut away clothing.
- Manually immobilize the injured extremity.
- Apply traction splint per the manufacturer directions.
- Check distal CMS before and after splinting.

Dislocations/sprains

- Splint joint injuries in the position found.
- Support with blanket, pillow, or well-padded splint. Elevate the limb. Use an ice pack.

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.

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
- Grasp firmly with one hand and pull to remove
- 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
  - Law enforcement officer requests medical evaluation. Police protocol may require transport. This may be by PD or ambulance.
- Follow guidelines regarding restraint of aggressive or violent patients (p. 88)

Burn Hazard

When a TASER is used in the presence of pepper spray propellant, there is a burn hazard. Electrical arcing from 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.

TRANSPORT AND DESTINATION

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 notify receiving hospital immediately. In rare cases it may be appropriate to rendezvous with a distant medic unit.

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.

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. Patient is ambulatory
2. Patient has a non-urgent condition and is clinically stable.
3. Patient does not require oxygen or other ongoing care
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.

Final Disposition Options

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

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 needed.

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. Patient is ambulatory
  B. Patient has a non-urgent condition and is clinically stable
  C. Low index of suspicion for major mechanism of injury
  D. Patient must not have
     a. Need for a backboard
     b. Uncontrolled bleeding or pain
     c. Need for high flow oxygen

TRANSPORT AND DESTINATION (CONT.)

Free-standing Emergency Department
(emergency department not connected to a hospital)

- Selected patients may be transported to a clinic or urgent care clinic by fire department EMTs if they meet the following criteria:
  A. Patient has a non-urgent condition and is clinically stable
  B. Low index of suspicion for cardiac or other significant problems or injuries

Hospital Emergency Department

- All other patients requiring transportation.

For transport decisions guidance EMTs may consult with paramedics or emergency department personnel.

EMTALA

The Emergency Medical Treatment and Labor Act (EMTALA) is a federal statute signed into law in 1986. It requires hospitals (not clinics or private doctor offices) to undertake appropriate evaluation and care of any patient who presents to the emergency department regardless of the mode of arrival. Key points are:

- EMTALA is in effect once EMS has entered hospital grounds (even prior to entering the ED).
- Once on hospital grounds, EMS should not be asked to “transfer” a patient to another hospital.
- Hospitals may transfer a patient, but only after evaluation/stabilization and after coordinating with the receiving hospital.

NOTES

MED ADMINISTRATION AND ASSISTANCE

EMTs in King County are permitted to administer medications or assist patients with their prescribed medications. Always follow your local agency guidelines.

Medication Administration:

- Aspirin
- Epi
- Oral Glucose
- Naloxone

Medication Assistance:

- MDI (inhalers)
- Nitro

ASPIRIN

(Not authorized for Seattle EMTs)

Indications:

- Chest pain with suspicion of ACS

Contraindications:

1. Patient is allergic to aspirin.
2. Patient has taken 324 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
6. Suspected thoracic dissection

Procedure:

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 tablets. Do not use enteric coated aspirin.
2. Be sure that the patient is alert and responsive, meets indications and has no contraindications.
3. If a reduced dose of aspirin has been taken by the patient within the last hour, a modified dose can be given. For example, if 81mg was taken, the patient may be given 3 additional 81mg tablets)

MED ADMINISTRATION: ASPIRIN

MED ADMINISTRATION: EPI

EPINEPHRINE 1mg/ml (1:1000)

Indications For Use

Anaphylaxis is a severe life threatening allergic reaction. EMTs are authorized to administer Epinephrine 1mg/ml 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

"Check and Inject" Procedure: *

Confirm that patient is experiencing anaphylaxis and meets above criteria.

1. Confirm correct medication and check expiration date.
2. Prep patient's skin.
3. Insert needle into medication vial, draw up desired dose and remove all air bubbles from syringe.
4. Confirm medication is in syringe.
5. Confirm correct dose with partner.
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

MED ADMINISTRATION: EPI

8. Remove needle and engage needle safety 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.

* “Check and Inject” IM epi administration requires specialized training authorized by the Medical Program Director

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 medication in the syringe and verify the dosage.

MED ADMINISTRATION: ORAL GLUCOSE

ORAL GLUCOSE

Indications:

- Hypoglycemia (blood glucose <60 mg/dl confirmed through blood glucometry)
- Patient is conscious and able to swallow

Contraindications:

- Unconsciousness
- Patient is unable to swallow

Procedure:

- Remove cap from Oral Glucose tube and slowly squeeze contents into patient's mouth, directing them to swallow
- Recheck blood glucometry after 5 minutes and repeat as needed.
- If the patient is left at home, you must provide aftercare instructions. (p. 26)

NALOXONE

Indications:

- Suspected opioid overdose in respiratory failure or arrest (slow or absent respirations, decreased LOC or unresponsive, pinpoint pupils)

Contraindications:

- Pulseless patient (begin high quality CPR)
- Patient is awake and alert with normal respiratory effort

Procedure:

- Perform primary assessment
- Request ALS if not already enroute
- Identify suspected opioid overdose
- Ventilate with BVM for at least 1 minute while assembling naloxone kit
- Waste 1ml of the naloxone so that the syringe has a total of 1ml (1mg) prior to administration
- Deliver 1mg naloxone intranasal
- Peds (>10kg) dose is 1mg (consider ½ in ea. nostril)
- Resume BVM ventilation
- Monitor level of consciousness, respiratory drive, and vital signs including pulse oximetry
- Be prepared for patient to awaken quickly; be prepared for vomiting
- Document time of naloxone administration
- Document vitals, GCS, pulse oximetry at 5 minutes after naloxone administration

(Seattle Fire Department EMTs are piloting IM naloxone)

MED ADMINISTRATION: NALOXONE

Intranasal Naloxone Algorithm

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

Intranasal Naloxone Algorithm (cont.)

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
Waste 1ml of the naloxone
Insert soft tip atomizer (MAD) into one nostril
Deliver 1ml (1mg) naloxone
Resume BVM ventilations
Monitor vital signs and patient status

ASSISTING WITH ADMINISTRATION OF PRESCRIBED MEDICATION

- Initiate assessment and treatment of the patient as indicated by their signs and symptoms.
- Determine whether assisting with medication is appropriate for this complaint
- 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 is not expired
- 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. This generally means the EMT can:
  - retrieve the medication
  - open the packaging
  - hand the medication to the patient.
- 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.

MED ASSISTANCE: INHALERS (MDIs)

METERED DOSE INHALERS (MDIs)

- 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.

MED ASSISTANCE: NITRO

NITROGLYCERIN (Nitro)

- The patient may be assisted in taking their prescribed nitroglycerin (NTG or nitro). 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
- The patient should not have taken Viagra or Levitra within the past 24 hours or Cialis within the past 48 hours.

NOTES

STUDIES: FACT

FACT: First Responder Airway and Compression Rate Trial

Departments will be randomized to different treatment arms.
Departments will switch from one arm to another during the course of the study.

Population: Non-traumatic cardiac arrest
Exclusions:

- "P" patients: pediatric, pregnant, prisoner, opt out bracelet (use mask ventilation)
- Patients who arrest with medics on scene (use mask ventilation)
- Medics arrive first or simultaneously (use mask ventilation)
- Traumatic arrest (use mask ventilation)

Please activate the metronome for all patients, even those who will otherwise be excluded.

EMT Airway

i-gel:*

- Position head in "sniffing" position
- Suction as needed
- Select correct size i-gel (men: 5, women: 4)
- Lubricate the back of the i-gel and insert
- Attach neck strap
- Provide one-person ventilation

- Verbalize: “First breaths i-gel”
- If first attempt is not successful, perform second attempt
- Consider stepping down one size
- If 2 unsuccessful attempts, use BVM
- Don’t pause chest compressions during insertion
- Ratio 30:2 once i-gel is in place
- Ventilate to achieve chest rise
- After intubation, switch to continuous compressions

* *Use of the i-gel requires supraglottic airway endorsement from the WA DOH*

Mask ventilation:

- Position head in “sniffing” position. Suction as needed.
- Place an oral airway
- Place mask using 2-handed, thumbs-down approach
- Verbalize “First breaths BVM”
- Maintain optimal positioning for coordinated (2-person) ventilation
- Ratio: 30:2
- Ventilate to achieve chest rise
- After intubation, switch to continuous compressions

STUDIES: FACT (CONT.)

CPR Compression rate

- The metronome will be set at fixed rate of 100, 110, or 120 for a period of several months and then reset to an alternate rate.
- Open AED. Metronome is pre-set for assigned rate.
- Use this rate throughout the resuscitation (even if BLS arrives after medics)
- Forgo use of study metronome if re-arrest occurs enroute to the hospital.

Documentation

- Record in ESO:
  - -Type of airway (i-gel vs BVM)
  - -Use of an oral airway
  - -Approximate time of placement
- Register cardiac arrest in EMS Online RAIN form
- Upload AED recording to KCEMS

NOTES

NOTES

PEDIATRIC VITAL SIGNS

Age	Weight	HR	Resp rate	Min SBP
Newborn	≤4 kg (≤9 lb)	100-180	30-80	
<3 months	4 kg (9 lb)	100-180	30-60	60
~4 months	6 kg (13 lb)	100-180	30-60	70
~8 months	8 kg (18 lb)	100-180	30-60	70
~12 months	10 kg (22 lb)	90-170	24-40	72
~2 years	13 kg (29 lb)	90-160	24-40	74
~4 years	16 kg (35 lb)	80-140	22-34	78
~6 years	20 kg (44 lb)	70-130	20-30	82
~8 years	26 kg (57 lb)	70-130	18-30	86
~10 years	32 kg (70 lb)	60-110	18-30	90

Abbreviations

AVPU	Alert, verbal, pain, unresponsive
CHF	Congestive heart failure
CMS	Circulation, motor, sensory
CNS	Central nervous system
COPD	Chronic obstructive pulmonary disease
DNAR	Do not attempt resuscitation
ETT	Endotracheal tube
IOS	Index of suspicion
LOC	Level of consciousness
LVO	Large vessel occlusion
MDI	Metered-dose inhaler
MOI	Mechanism of injury
NOI	Nature of illness
NRB	Non-rebreather mask
NTG	Nitroglycerin
OPA	Oropharyngeal airway
OPQRST	Onset, provocation, quality, radiation, severity, time
POLST	Portable Orders for Life-Sustaining Treatment
SAMPLE	Signs/symptoms, allergies, medication, past history, last oral intake (meal), events leading up to complaint

Organization	Address	Telephone
Bellevue Fire Department	450 110th Avenue NE Bellevue, WA 98004	(425) 452-6892
King County Medic One	20811 84th St. #102 Kent, WA 98032	(206) 263-2200
NE King County Medic One	8450 - 161st Avenue NE Redmond, WA 98052	(425) 556-2200
Seattle Fire Department Medic One	325 Ninth Avenue Seattle, WA 98104	(206) 386-1483
Shoreline Fire Department	17525 Aurora Avenue N. Shoreline, WA 98133	(206) 533-6500

AMBULANCE AND COMMUNITY RESOURCES

Organization	Services provided	Telephone
American Medical Response	Private ambulance transport	(206) 444-4440 (Main) (206) 623-1111 (Dispatch) or 1-800-542-7701
Tri-Med Ambulance	Private ambulance transport	(206) 243-5622
KC Sheriffs Office Search & Rescue	Special operations, search and rescue	(206) 296-3853
Crisis Clinic of King County	Mental health resource agency for patients, relatives, etc.	(206) 461-3222
King County Crisis and Commitment services	24/7 resource line for EMS personnel dealing with patients in behavioral/psychiatric crisis. (EMS only, not a public resource)	(206) 436-3009
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 EMS Division	(206) 296-4693	Administration of EMS services
King County EMS Fall Prevention Program	(206) 263-8544	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

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	
Evergreen Hospital	Kirkland	425-899-1711	
EvergreenHealth Hospital	Monroe	360-794-1402	
Good Samaritan Hospital	Puyallup	253-697-4200	
Harborview Medical Center	Seattle	206-744-3000	
Kaiser - Central	Seattle	206-326-3223	
Kaiser - Eastside	Bellevue	425-502-4120	
Mary Bridge Children's Hospital	Tacoma	253-403-1418	
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	

Emergency Departments (cont.)

Hospital	City	Telephone	Door Code
St. Anne's Hospital	Burien	206-431-5316	
St. Clare Hospital	Lakewood	253-985-6700	
St Elizabeth Hospital	Enumclaw	360-802-3208	
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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“Whoever saves one life has saved an entire world”

Public Health - Seattle & King County
Emergency Medical Services Division
401 Fifth Avenue, Suite 1200
Seattle, WA 98104-1818
T (206)296-4693 F (206)296-4866
https://kingcounty.gov/depts/health/emergency-medical-services.aspx

EMS Training Website:
www.emsonline.net

Public Health
Seattle & King County