TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

Thanks to John Jerin and Steve Perry for help in the development of these protocols. Special thanks to Betty Hurtado and Maria Ilao for formatting and production.

Thanks to Jonathan Larsen and Norm Nedell for their meticulous review of the guidelines, and to the training officers of Seattle and King County fire departments for their helpful comments.

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

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.

Mickey Eisenberg, MD, PhD
King County Medical
Program Director

Michael K. Copass, MD
Medical Director
Medic One
Seattle Fire Department

Thomas Hearne, PhD
Division Director
Emergency Medical Services

Mike Helbock, M.I.C.P.
Training Manager,
Emergency Medical Services

ABDOMINAL COMPLAINTS

ALS Indicators

Signs and symptoms of shock which include:
- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 59)
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Unstable vital signs

Positive postural changes (see page 108)

Evidence of ongoing bleeding

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 (Trendelenburg 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 which include:

- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 59)
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Unstable vital signs

Multiple seizures (status seizures)

Single seizure longer than five (5) minutes or with more than 15 minutes postictal with no improvement in LOC

Cyanosis

Hypoglycemia with decreased LOC

Seizure in pregnant female

Seizure with severe headache

Seizure associated with trauma

Drug or alcohol related seizures

BLS Indicators

Adequate respirations

Transient symptoms including seizure with stable vital signs

First time or typical seizure pattern for the patient with stable vital signs

ALTERED LOC (CONT.)

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.

Position patient in position of comfort if alert and airway is secure; if not, then use recovery position.

Perform blood glucometry.

Loosen restrictive clothing.

Retain relevant drug containers and notes for transport with patient.

ANAPHYLAXIS

ALS Indicators

Respiratory distress

Signs and symptoms of shock which include:
- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 59)
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Unstable vital signs

Use of EpiPen (see page 75)

BLS Indicators

Bite or sting with local reaction or usual reaction to medication or food

Stable vital signs

No anaphylaxis

BLS Care

EpiPen for anaphylaxis (see page 75).

Oxygen as needed.

Reassure patient.

Remove stinger by scraping away from puncture site.

Any patient who receives an EpiPen (pre or post EMS arrival) should be transported (mode of transport depends on clinical findings and symptoms) and evaluated in a hospital.

ASTHMA

ALS Indicators

- Decreased LOC
- Extreme anxiety and agitation
- Ashen color, cyanosis
- Failure to respond to repeated inhalers
- History of previous intubation
- Respiratory distress—unable to speak normally
- Labored respirations regardless of rate when found with other indicators
- Audible wheezing not improved with inhalers
- Sustained tachycardia (see page 59).

BLS Indicators

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

BLS Care

- Assist patient with his or her medications.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Reassure patient and urge calmness.
- Obtain oximetry reading (see page 109).
- Monitor vital signs every five to ten minutes.

BEHAVORIAL

ALS Indicators

Decreased LOC

Abnormal behavior with unstable vitals

Abnormal behavior with serious co-morbidity (e.g., drug or alcohol OD)

BLS Indicators

Abnormal behavior with stable vital signs

BLS Care

Secure safety of personnel and patient.

Provide support, reassurance to patient.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Wound or trauma care if indicated.

Call police if necessary (if patient refuses transport but EMTs feel patient needs further evaluation).

Use restraints when warranted (see page 100).

Monitor patient behavior and physiological changes, do not leave patient alone or unobserved.

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

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

Second or third degree burns to face/head

Second or third degree burns covering greater than 20% of the body

Severe pain (request ALS for pain control)

BLS Indicators

All other burns

BLS Care

First degree burn

- Cool, moist pads

Second degree burn

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

Always be alert to possible airway involvement.

CHEST DISCOMFORT

ALS Indicators

Chest pain or discomfort of suspected myocardial ischemia (angina or MI)

Chest pain with suspected myocardial ischemia (angina or MI) — particularly if there are associated symptoms such as shortness of breath, nausea/vomiting, diaphoresis

Altered LOC

Use of nitroglycerin

Unstable vital signs

Signs and symptoms of shock which include:
- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 59)
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Discomfort, pain, or unusual sensations between the navel and the jaw if the patient is 40 years old or older **and/or** has a history of heart problems

BLS Indicators

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

Stable/normal vital signs

CHEST DISCOMFORT (CONT.)

BLS Care

Request paramedics if indicated.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Assist patient with nitroglycerin and/or aspirin if indicated (see pages 57 and 56).

Position of comfort.

Reassure patient.

Monitor vital signs every 5 minutes.

Monitor ECG if authorized, record strip.

Special Instructions For Chest Pain

Patients with possible cardiac chest pain require ALS evaluation

Maintain high index of suspicion that atypical chest pain may be cardiac in origin

Elderly patients, women, and diabetics may present with atypical findings such as fatigue, weakness, shortness of breath, or syncope

CHEST DISCOMFORT (CONT.)

Pain from the chest wall

Traumatic contusion – rib fracture or bruising, muscle tear, tendon/muscle strain

Overuse syndromes – repetitive action, heavy lifting

Breast cysts and infections

Shingles – a herpetic rash characterized by redness and blisters

Costochondritis – inflammation of rib cartilage

Pain from the lungs and pleura

Pleuritic pain – pleurisy, pneumonia, pneumothorax, pulmonary embolus, asthma, bronchitis, upper respiratory infection (URI)

Pain from the mediastinum

Cardiac and great vessel pain – MI and angina, dissection of a thoracic aneurysm

Esophageal pain – esophagitis, esophageal spasm, heartburn, reflux

Pericardial pain – pericarditis, mediastinal air from ruptured bronchus

Pain referred from the abdomen

Gallbladder – cholecystitis, gallstones
Stomach, esophagus – gastritis, esophagitis, hiatal hernia
Pancreas – pancreatitis

Psychosomatic pain

Stress/Panic attack
Hyperventilation

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, illness, circumstances, trauma, alcohol, drugs)
- Cardiac arrest
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

BLS Indicators

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

BLS Care (Hypothermia)

- Remove patient from the cold environment and protect the patient from further heat loss.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Provide high flow oxygen via pocket facemask or bag-valve mask (see page 64).

COLD-RELATED (CONT.)

Remove wet clothing.

Position of comfort. If decreased LOC, place in recovery position.

Warm the patient.

Warm the aid unit.

Monitor patient's vital signs, use ECG monitor if authorized, repeat temperature measurements.

BLS Care (Hypothermic Cardiac Arrest Or Profound Bradycardia)

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

If AED states "Shock Indicated", follow cardiac arrest protocol.

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

BLS Care (Frostbite)

Protect cold-injured part from further injury.

Remove any constricting or wet clothing or shoes and replace with a dry bulky dressing.

Splint the affected extremity and do not let the patient walk on or use it.

COLD RELATED (CONT.)

Remove constricting jewelry (e.g., rings, watchbands).

Do not rub or massage injured tissue.

Transport to an emergency room.

Do not rewarm frozen tissue unless transport time will exceed two hours and it is certain that the thawed tissue will not refreeze. Obtain medical direction prior to initiating rewarming. Rewarming should be done with 100°F - 105°F water.

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

CONGESTIVE HEART FAILURE

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

ALS Indicators

Decreased LOC

Signs and symptoms of shock which include:
- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 59)
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Extreme anxiety and agitation

Unable to lie flat

Ashen color, cyanosis

Respiratory distress—unable to speak normally

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.

CONGESTIVE HEART FAILURE (CONT.)

Position patient upright with legs dangling (dependent) unless hypotensive.

If hypotensive, place patient in supine position.

Reassure patient and urge calmness.

Obtain oximetry reading (see page 109).

Monitor vital signs every 5 to10 minutes depending on patient's condition.

DIABETIC

ALS Indicators

Altered LOC

Absent or depressed gag reflex, as indicated by inability to swallow

Patient unable to protect airway

Unstable vital signs

Rapid respiration

Signs and symptoms of shock which include:
- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 59)
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Failure to respond to oral glucose

Suspected diabetic ketoacidosis

Seizures

BLS Indicators

Normal or mild reduction in LOC

Gag reflex intact, as indicated by swallowing

Patient can protect airway

Normal vital signs

Symptoms of hypoglycemia relieved by oral glucose

Hyperglycemia with normal vital signs

BLS Care

Request paramedics if indicated.

Perform blood glucometry (see page 77).

DIABETIC (CONT.)

Provide supplemental oxygen and/or ventilatory assistance as necessary.

If hypoglycemic and patient is able to swallow, position upright and give oral glucose.

If hypoglycemic, and patient is **unable to swallow**, position on side, give oxygen, ventilation and await paramedics.

Maintain normal body temperature.

Monitor vital signs in response to sugar.

Diabetic patients with symptom of hyperglycemia should be evaluated in an emergency room. Transport decision based on clinical presentation.

If in doubt whether symptoms are due to hypoglycemia and swallowing ability is intact, position upright and give oral glucose.

Special Instructions For Diabetic Patients

Patients with hypoglycemia who have responded to oral glucose may be left at scene (see page 78). These patients must have a repeat glucose level of 60 mg/dl or higher documented and **after-care instructions** must be left with the patient.

DIABETIC (CONT.)

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

History suggesting hypoglycemia

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

History suggestion hyperglycemia

- Recent infection
- Polyphagia (excessive food intake)
- Polydipsia (intense thirst)
- Polyuria (excessive frequency and amount of urine)
- Vomiting, abdominal pain
- “Flu-like” symptoms, nausea
- Insufficient insulin dosage
- Gradual onset
- Normal activity level

DIABETIC (CONT.)

Signs and symptoms of Diabetic Coma (Hyperglycemia with ketoacidosis)

Altered LOC (restless to coma)

Warm and dry skin

Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Rapid, weak pulse

Reduced circulation in extremities

Vomiting

Sweet, fruity breath

Kussmaul breathing (deep, rapid)

High blood glucose

- Greater than 200 mg/dl (mild hyperglycemia)
- Greater than 300 mg/dl (moderate hyperglycemia)
- Greater than 400 mg/dl (severe hyperglycemia)

Signs and symptoms of Insulin Shock (Hypoglycemia)

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

Irritability, confusion, seizures or coma

Pale, moist skin

Normal or rapid pulse

Low blood glucose (usually less than 50 mg/dl) with glucometry

DROWNING

ALS Indicators

- Any underwater rescue
- Altered LOC
- 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)
- Cardiac or respiratory arrest

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 a backboard if spine injury is suspected or patient is unresponsive.

DROWNING (CONT.)

If there is no suspected spinal injury, consider recovery position.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Prepare suction, expect vomiting.

Follow resuscitation protocols if cardiac or pulmonary arrest.

Warm aid unit.

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

EYE INJURIES

ALS Indicators

Major mechanism of injury

Penetrating injuries to eye

BLS Indicators

Minor mechanism of injury

Eyelid laceration with intact vision

Ultraviolet burns

BLS Care

Request paramedics if indicated.

Stabilize an impaled object in place and bandage both eyes.

Flush chemical burns to the eyes for 15 minutes with normal saline or water if saline is not available.

Ultraviolet burns to the eyes: treat with cool compresses over closed eyes.

GYNECOLOGIC

ALS Indicators

- Decreased/altered LOC
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting
- Sustained tachycardia (see page 59)
- Moderate to severe hypertension (140 mmHg systolic or greater) in a pregnant woman
- Seizures
- Severe unremitting pelvic pain
- Excessive vaginal bleeding
- Possible ectopic pregnancy

BLS Indicators

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

BLS Care

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

HEAD AND NECK

ALS Indicators

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

BLS Indicators

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

BLS Care

- Request paramedics if indicated.
- Ensure a patent airway.
- Provide supplemental oxygen and/or ventilatory assistance as necessary.
- Provide neutral, in-line cervical stabilization with proper sized cervical collar and padding.

HEAD AND NECK (CONT.)

Secure to backboard.

Bandage as necessary.

Monitor vital signs and neurologic status.

Special Instructions For Suspected Cervical Injury

Suspected cervical injury with non-alignment

One attempt to realign neck to the neutral, in-line position unless new pain, additional numbness, tingling or weakness, additional compromise of airway or ventilation or resistance encountered.

Apply cervical collar and backboard (see page 120). If unable to realign then secure in the original position.

Helmet Removal

As long as the airway is not affected and remains patent *AND* the c-spine can be secured in an neutral, in-line position, leave football and motorcycle helmets on.

All other non-fitted helmets may be removed as soon as possible (e.g., bicycle 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 to a backboard (see page 120).

HEAT-RELATED

ALS Indicators

Decreased/altered LOC

Hot dry skin in the presence of elevated temperature

Sustained tachycardia (see page 59)

Hypotension (systolic blood pressure less than 90 mmHg)

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).

HEAT-RELATED (CONT.)

Reassure and cool patient.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Loosen or remove clothing.

Apply cool packs to neck, groin and armpits for the heat-stroke patient.

Keep skin wet by applying cool water with sponge or wet towels.

Fan aggressively.

Place patient in Trendelenburg position.

If patient is responsive and not nauseated, have patient drink water.

If the patient is vomiting, place in recovery position.

Monitor patient's vital signs and temperature (oral or tympanic).

OBSTETRIC

ALS Indicators

Imminent birth

Decreased/altered LOC of mother/newborn baby

Abnormal blood pressure (less than 90 mmHg systolic or greater than 140 mmHg systolic)

Complications with this pregnancy such as:
- Placenta previa
- Abruptio placenta
- Diabetes

Excessive vaginal bleeding

Suspected ectopic pregnancy

Any abdominal trauma to mother during third trimester

Trauma with significant MOI to mother during third trimester

Known or anticipate delivery of twins or more

Breech or limb presentation

Prolapsed cord

Shoulder dystocia

Uncontrolled postpartum hemorrhage

Seizures

Dispatch to birthing center/midwife

OBSTETRIC (CONT.)

BLS Indicators

Early pregnancy, pain or bleeding with stable vital signs

Childbirth has occurred and there are no complications and mother and baby stable

BLS Care

Request paramedics if indicated.

Reassurance and emotional support.

Monitor vital signs.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Nothing by mouth.

Allow patient to choose position of comfort. *Supine hypotension may occur if patient is flat on back. Place patient onto left side to relieve pressure on the vena cava and place pillow between knees for comfort.*

Imminent Delivery Instructions

Prepare delivery area (out of public view).

Position mother in semi-reclining position.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Encourage mother to breathe deeply between contractions and push with contractions.

OBSTETRIC (CONT.)

Prepare OB equipment and don sterile gloves, gowns, and eye protection.

As baby crowns, support head with gentle pressure to avoid explosive birth.

If membrane is still intact, rupture with your fingers to allow amniotic fluid to leak out.

If cord is around the baby's neck, gently slip it over the head. Do not force it!

If the cord is too tight to slip over the head, apply umbilical cord clamps and cut.

As soon as baby's head emerges, suction the mouth and nose with bulb syringe.

Allow the mother to push and support the head as it rotates.

Caution: *Babies are slippery as they exit the birth canal; be careful and alert.*

After delivery, place two clamps on the cord two inches apart and six inches away from the baby. Cut the cord between the clamps.

Suction baby again.

Dry and inspect the cord for bleeding.

Wrap baby in warm blanket.

Place baby on its side to facilitate drainage.

Inform the mother of the baby's gender.

Note the time of birth, APGAR score of baby and gender.

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

OBSTETRIC (CONT.)

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 as indicated via nasal cannula or nonrebreather mask.

Do not pull on the umbilical cord.

The placenta should be delivered spontaneously within 20 minutes.

If delivered, wrap the placenta in the bag supplied in the OB Kit and send with the mother and baby to the hospital.

Massage the uterus with moderate firmness on the lower abdomen to stimulate uterine contraction.

Monitor vital signs of both mother and infant.

Maintain body temperature of both patients.

BLS transport of mother and baby to hospital, if no ALS indicators.

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
- High index of suspicion based on mechanism of injury
- Contact paramedic for severe pain (patient needs pain control)

BLS Indicators

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

BLS Care

- Request paramedics if indicated.
- Protect cervical spine if indicated.
- Reassure and maintain normal body temperature.
- Apply direct pressure and sterile dressing over major bleeding.

ORTHOPEDIC (CONT.)

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Nothing by mouth.

Gently support injured part (see page 122).

Allow patient to choose position of comfort.

Check and record distal circulation, motor, and sensory (nerve function) before and after splinting.

Immobilize and splint if indicated.

Apply cold/ice pack to injured part (for closed tissue injury only).

Elevate fractured limb.

Prepare patient for transport (backboard).

Monitor patient's vital signs every 5 to 10 minutes.

Realignment of Long Bone Fractures

Attempt to realign (open or closed) long bones that are angulated in the middle 1/3 then splint.

Long-bone fractures, which occur in the proximal or distal 1/3, that may or may not involve a joint, may be realigned if compromise of distal circulation or nerve function is detected and definitive care is delayed.

ORTHOPEDIC (CONT.)

Realignment may sometimes be necessary to facilitate packaging for transport.

Check and document CMS before and after splinting and/or realignment.

Pelvic Fractures (see page 124)

Multiple Extremity Fractures

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

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

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 meningitis

BLS Indicators

Febrile seizure (generalized tonic/clonic—see page 42)

Fever/infection with low index of suspicion

BLS Care

Use **Pediatric Assessment Triangle**.

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.

PEDS FEVER AND INFECTION (CONT.)

May assist caregiver with medication to reduce temperature (e.g., Tylenol (acetaminophen), not aspirin).

If febrile, attempt to reduce patient's temperature with cool towels.

Remove clothes. Cover loosely with one layer. Do not allow to chill.

Special Instructions for Febrile Seizures

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 should be evaluated in an emergency department

Febrile seizures are always generalized tonic/clonic in nature. Any focal seizure is not a febrile seizure until proven otherwise.

RESPIRATORY

ALS Indicators

- Decreased LOC
- Extreme anxiety and agitation
- Tripod position
- Respiratory distress—unable to speak normally
- Respirations greater than 30 per minute
- Ashen color, cyanosis
- Failure to respond to usual treatments
- Labored respirations regardless of rate when found with other indicators
- Audible wheezing, rales when found with other indicators
- Use of EpiPen injector
- Sustained tachycardia (see page 59)

BLS Indicators

- Respiratory complaints due to common causes such as a cold, flu, bronchitis
- Respiratory complaints of a chronic but stable nature

RESPIRATORY (CONT.)

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 oximetry reading (see page 109).

Reassure patient and urge calmness.

Assist patient with his or her medications.

Administer EpiPen if indicated for anaphylaxis (see page 75).

Monitor vital signs every 5 to 10 minutes depending on patient's condition.

SEIZURES

ALS Indicators

Multiple seizures (status seizures)

Single seizure longer than five (5) minutes or more than 15 minutes postictal with no improvement in LOC

Seizure due to hypoglycemia

Seizure due to hypoxia

Seizure following head trauma

Drug or alcohol associated seizures

BLS Indicators

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

BLS Care

Generally seizures that last more than 5 minutes require paramedic care.

After patient awakens, perform exam to determine if any injuries occurred or if any neurologic abnormalities exist.

During seizure, position the patient on his/her side.

During and after seizure, provide oxygen.

Perform blood glucometry.

Obtain oximetry reading after seizure.

SOFT TISSUE

ALS Indicators

Significant head injury

Signs and symptoms of shock which include:
- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 59)
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Soft tissue injuries that might compromise the airway

Excessive uncontrolled bleeding

Altered LOC

High index of suspicion based on mechanism of injury

BLS Indicators

Conscious and alert

Stable vital signs

Soft tissue injuries limited to the superficial layer of the skin (epidermis and dermis)

Single digit amputations (see page 71)

Soft tissue injuries, with bleeding controlled by direct pressure and/or elevation

SOFT TISSUE (CONT.)

BLS Care for OPEN Soft Tissue Injuries

Request ALS if indicated.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Maintain an open airway.

Ensure adequate breathing.

Control bleeding.

Maintain normal body temperature.

Monitor vital signs.

Cervical spine protection, if indicated.

Special Instructions for OPEN Soft Tissue Injuries

Control bleeding with direct pressure on the area or upon pressure points. Use pressure dressings or pressure device (like a BP cuff) for severe, uncontrolled bleeding.

Amputation (see page 71)

Removal of Foreign Objects

Large, easily removed debris, such as glass, splinters, or gravel can be removed before bandaging.

SOFT TISSUE (CONT.)

Large, deeply imbedded fragments or projectiles should be secured in place by the bandage.

Decontamination

Remove wet chemicals (e.g., acid) by repeated flushing with water.

Remove dry substances by first brushing the area and then by flushing with water.

Burns

Easily removed debris should be taken off the burned area, then cover the area with dry, sterile dressings.

SOFT TISSUE (CONT.)

BLS Care For CLOSED Soft Tissue Injuries

Type	Treatment
Contusion Ecchymosis Hematoma Edema	Reassure patient. Immobilize/splint if indicated. Ice or cold pack. Elevate.
Sprain/Strain	Reassure patient. Gently support the site. Note and record distal circulation, motor and nerve function before and after splinting. Apply ice pack to sprain/strain area. Splint and immobilize injured limb. Elevate injured limb. Arrange for transport to appropriate care.
Dislocation	Reassure patient. Gently support limb. Note and record distal circulation, motor, and nerve function before and after splinting. Apply ice pack to area. Splint and immobilize (see page 123).

STROKE

ALS Indicators

- Unconsciousness
- Decreased LOC
- Severe hypertension (blood pressure greater than 200 mmHg systolic or 110 mmHg diastolic with neurologic signs)
- Hypotension and severe bradycardia
- Seizures
- Severe headache/vomiting
- Uncontrolled airway and respiratory problems
- Progression of stroke symptoms

BLS Indicators

- Vital signs and condition stable
- Stroke history
- Stroke signs
- Airway secure

BLS Care

- Call paramedics if indicated.
- Determine time onset of stroke if possible
- Position patient in upright position.
- Open and manage airway.

STROKE (CONT.)

Deliver oxygen and/or ventilatory assistance as necessary.

Maintain normal body temperature.

Protect paralyzed limbs.

Monitor vital signs.

Perform **Cincinnati Stroke Scale** (see page 52).

Perform blood glucometry.

STROKE PLAN

- Revascularization by clot dissolving medication should be initiated within three (3) hours of a stroke.
- If a stroke is of recent onset, very short scene times and transport times are critical.
- Notify receiving hospital as soon as possible and attempt to precisely document the time of onset of symptoms.
- In general, arrival at hospital within two (2) hours of onset of symptoms is critical since it requires about one hour for Emergency Departments to determine eligibility for clot dissolving medication.

CINCINNATI STROKE SCALE

The Cincinnati Prehospital Stroke Scale is used in the field to detect stroke. An abnormal finding strongly indicates a stroke.

Facial Droop	*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 Drift	*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

NOTES

NOTES

ABBREVIATIONS

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

ADMINISTRATION OF MEDS

Follow departmental protocol regarding the administration of medication

ASSISTING WITH ADMINISTRATION OF PRESCRIBED MEDICATION

Initiate assessment and treatment of the patient as indicated by the signs and symptoms.

Verify the following when possible:

- medication has been prescribed by a physician for the patient
- medication inside the container is the one indicated on the prescription label
- medication has not passed the expiration date on the prescription label

Determine the last time the patient self-administered the medication and the number of doses taken.

If in doubt, contact a medical control doctor, patient's personal physician, or paramedic for medical direction. Administer the medication as directed.

Document the administration of the medication by recording the drug, dose, method, time and name of physician ordering the assistance with medication.

After five (5) minutes, reassess and document the patient's vital signs and any changes.

ADMINISTRATION OF MEDS (CONT.)

ACTIVATED CHARCOAL

Only administer activated charcoal after conferring with the medical control doctor or paramedic. In addition, feel free to consult with Poison Control at 1-800-222-1222. Recommended dosage is 1 gram/kg.

ASPIRIN (ASA)

A patient may request assistance with the administration of aspirin in association with a cardiac pain episode. Aspirin has been shown to be useful in the early phase of myocardial infarction. If the patient has 325 mg tablets of aspirin you may assist in the same manner as described for nitroglycerin. (Four 80 mg tablets may be used instead of one 325 mg tablet.) The patient should place one aspirin tablet in his or her mouth, which may be chewed or swallowed with a small amount of water.

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.

EMTs are authorized to assist in one treatment only. If the patient has already used the medication in excess of the prescription, do not assist in additional treatment. If the patient is

ADMINISTRATION OF MEDS (CONT.)

unable to self-administer the medication, you should focus on airway management and oxygenation. This would qualify as an ALS indicator.

NITROGLYCERIN

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

The patient may be assisted in taking prescribed nitroglycerin (NTG or nitro) if the pain is the same type of pain for which he or she normally takes nitroglycerin (i.e., typical angina) and systolic **BP greater than 100 mmHg**. 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
- Patient takes no more than three doses total (5 minutes apart)
- Prescription expiration date should not have passed

ADMINISTRATION OF MEDS (CONT.)

Patient should be sitting or lying down before assisting with nitro

Must be the patient's prescribed nitroglycerin

ORAL GLUCOSE

Prompt recognition and treatment of hypoglycemia is an important EMT skill.

Indications for oral glucose:

Suspected hypoglycemia in a diabetic (confirm through blood glucometry when available)

Patient is awake and able to swallow

Contraindications for oral glucose:

Unconsciousness

Patient is unable to swallow

Procedure

Help the patient sip or chew any sugar containing substance such as honey, orange juice, candy, or granulated sugar or place a bead of the commercial sugar preparation under the patient's tongue.

Monitor patient's response to the sugar.

Repeat blood glucometry (when available).

If the patient is left at home, you must leave aftercare instructions.

SYRUP of IPECAC

Rarely used, may occasionally be recommended by Poison Control or medical control doctor or paramedic.

ALS INDICATORS FOR ALL PATIENTS

Any patient with the following is considered **"Sick"** and requires an ALS evaluation.

Decreased LOC

Airway Problems

Respiratory distress

Respirations greater than 30 per minute

Signs and symptoms of shock which include:

- Poor skin signs (pale, sweaty)
- Sustained tachycardia (persistent heart rate 100-120 or greater per minute depending on clinical setting)

  Sustained tachycardia may suggest hypoxia or impending shock
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Chest pain or discomfort of suspected myocardial ischemia (angina or MI)

Significant Index of Suspicion (IOS)

Significant Trauma/Mechanism of Injury (MOI)

- Multi-system trauma
- Fractures more than one location
- MVA—death in same vehicle

ALS INDICATORS FOR ALL PATIENTS

- MVA—high speed or significant vehicle deformation
- Falls greater than two times body height
- Thrown greater than 10 - 15 feet
- Penetrating injury to the head or “box”
- Age extremes: less than 6 or greater than 60
- “Lucky Victim”. A patient who apparently and unexpectedly escapes serious injury or death given the MOI.

AIRWAY MANAGEMENT

OROPHARYNGEAL (OP) AIRWAY

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

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

To size an oropharyngeal airway:

Choose correct size by measuring from the corner of the mouth to the ear lobe or from the chin to the angle of the jaw.

In infants and children, insert the airway tip down or sideways along with a tongue blade. Rotate down when you are halfway in the mouth or approaching the curve on the tongue.

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

AIRWAY MANAGEMENT (CONT.)

SUCTIONING

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

To suction with a Yankauer tip:

- 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 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.

ALERTS & AFTER-CARE INSTRUCTIONS

EMTs will leave alerts or after-care instructions as indicated for the following patients:

High Blood Pressure Alert

Inclusion
- Any patient with a systolic ≥ 160 mmHg or diastolic ≥ 100 mmHg

Exclusion
- Paramedic transported patient
- Nursing home patients

Optional
- Use judgment with trauma patients

High Blood Sugar Alert

Inclusion
- Diabetic with sugar ≥ 300
- Non diabetic with sugar ≥ 175

Exclusion
- Paramedic transported patient
- Nursing home patients

Optional
- Use judgment with trauma patients

Low Blood Sugar After-Care Instructions

Inclusion
- Diabetic on insulin who responds fully to oral glucose and who is stable enough to remain at home

Exclusion
- Paramedic or EMT transported patients

You must document that an alert or after-care instruction was provided and verify patient's home phone number.

BAG-VALVE MASK

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

Correct ventilation generates modest chest rise.

To properly place a BVM:

Choose appropriate size for the patient.

Place the apex of the mask on the bridge of the nose (between the eyebrows).

Settle the base of the mask between the lower lip and the prominence of the chin.

ONE EMT TECHNIQUE (Preferred)

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.

Open the airway by sitting back on your heels and tilting the head while lifting the chin with the hand on the mask.

Squeeze the knees to keep the head hyper-extended.

Squeeze the bag to ventilate.

Each ventilation should take one second and achieve chest rise.

BLEEDING CONTROL

To stop external bleeding:

Apply direct pressure on the open wound with sterile gauze or clean material.

Apply additional pressure if bleeding continues. A pressure dressing, BP cuff, or air splint can be used to apply direct pressure. If blood soaks through the dressings, add new dressings—do not remove the old dressings.

If not contraindicated by the injury, elevate the bleeding extremity above the level of the heart.

If bleeding is uncontrolled by direct pressure and elevation, apply pressure at the appropriate pressure point. Hold pressure only as long as necessary to control bleeding. Reapply pressure if bleeding recurs. If pressure is held for a long period of time, tissue damage can result.

A “pressure device” may be used for control of severe, uncontrolled bleeding when all other methods of bleeding control have failed. When necessary, an oversized blood pressure cuff may be used. Inflate it no more than is necessary to stop bleeding.

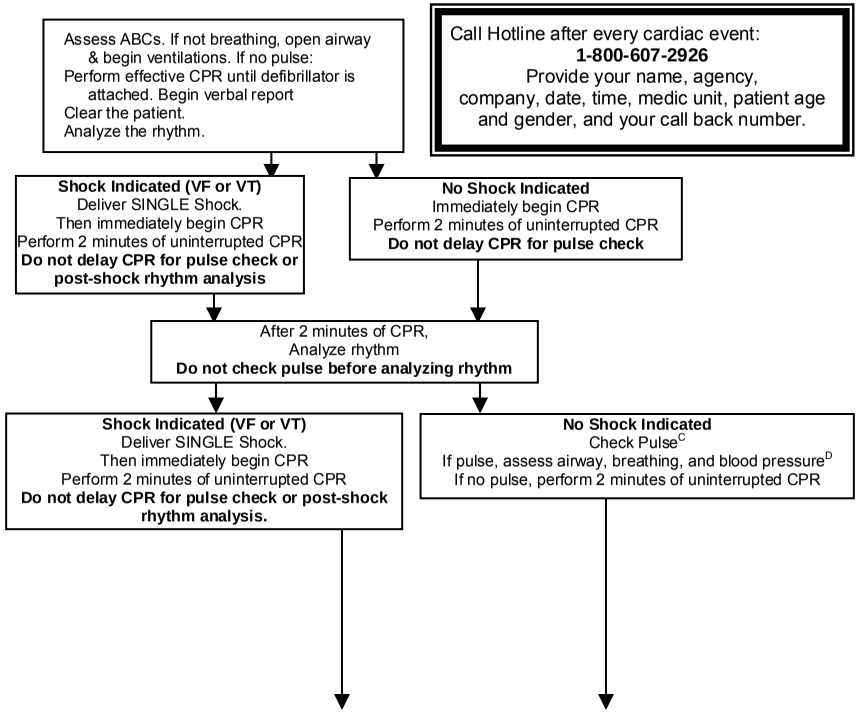
Once stopped, you may need to immobilize the extremity and apply cold packs.

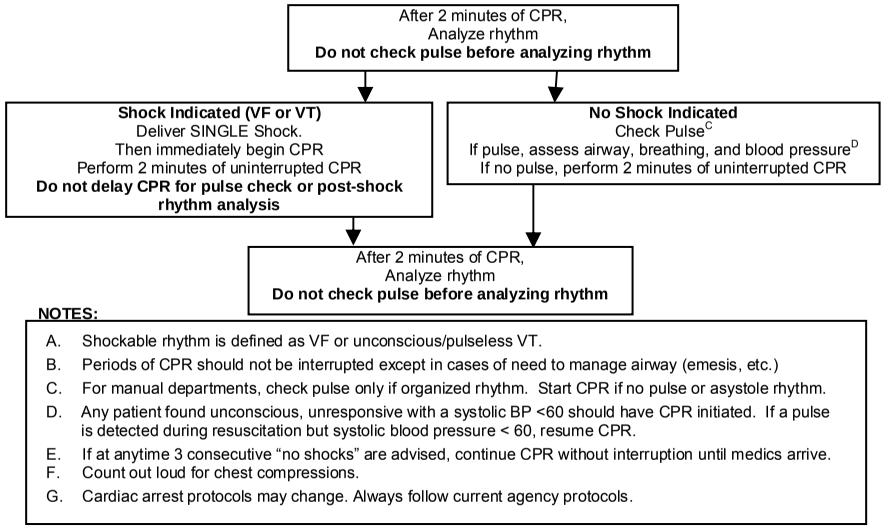
CPR FOR ADULTS

MANEUVER **HCP** = Health Care Provider	ADULT Adolescent and older
AIRWAY	Head tilt-chin lift (HCP: trauma, use jaw thrust)
BREATHS: Initial	2 breaths at 1 second/breath **(chest rise)**
Rescue breathing without chest compressions	10 to 12 breaths/minute (~1 breath every 5 to 6 seconds) **(chest rise)**
Rescue breaths for CPR with advanced airway	8 to 10 breaths/minute (~1 breath every 6 to 8 seconds)
Foreign-body airway obstruction	**Responsive:** Abdominal thrusts **Unresponsive:** CPR with airway check
CIRCULATION: Pulse check for ≤ 10 seconds	Carotid (can use femoral in child)
Compression landmarks	Center of chest, between nipples
Compression method (Push hard and fast) (Allow complete recoil)	**2 Hands**
Compression depth	~1 ½ to 2 inches
Compression rate	~ 100/minute
Compression-ventilation ratio	30:2 (1 or 2 rescuers)
DEFIB: AED	Use adult pads only.

CPR FOR CHILDREN AND INFANTS

CHILD **1 year to adolescent** (~ 12 years of age)	INFANT **Under 1 year of age**
Head tilt-chin lift (suspected trauma, use jaw thrust)	
2 effective breaths at 1 second/breath **(chest rise)**	
12 to 20 breaths/minute (~1 breath every 3 to 5 seconds) **(chest rise)**	
8 to 10 breaths/minute (~1 breath every 6 to 8 seconds)	
Responsive: Abdominal thrusts **Unresponsive:** CPR with airway check	**Responsive:** Back slaps and chest thrusts **Unresponsive:** CPR with airway check
Carotid (can use femoral in child)	Brachial
Center of chest, between nipples	Just below nipple line
2 Hands OR **1 Hand:** Heel of 1 hand only	1 rescuer: 2 fingers **HCP:** 2 rescuers: two thumb-encircling hands technique (preferred)
~1/3 to 1/2 the depth of the chest	
~100/minute	
30:2 (single rescuer) **HCP**: 15:2 (2 rescuers)	
Not performed on children less than 8 years.	


Assess ABCs. If not breathing, open airway & begin ventilations. If no pulse:
Perform effective CPR until defibrillator is attached. Begin verbal report
Clear the patient.
Analyze the rhythm.
Call Hotline after every cardiac event:
1-800-607-2926
Provide your name, agency, company, date, time, medic unit, patient age and gender, and your call back number.
Shock Indicated (VF or VT)
Deliver SINGLE Shock.
Then immediately begin CPR
Perform 2 minutes of uninterrupted CPR
Do not delay CPR for pulse check or post-shock rhythm analysis
No Shock Indicated
Immediately begin CPR
Perform 2 minutes of uninterrupted CPR
Do not delay CPR for pulse check
After 2 minutes of CPR,
Analyze rhythm
Do not check pulse before analyzing rhythm
Shock Indicated (VF or VT)
Deliver SINGLE Shock.
Then immediately begin CPR
Perform 2 minutes of uninterrupted CPR
Do not delay CPR for pulse check or post-shock rhythm analysis.
No Shock Indicated
Check Pulse C
If pulse, assess airway, breathing, and blood pressure D
If no pulse, perform 2 minutes of uninterrupted CPR



NOTES:

A. Shockable rhythm is defined as VF or unconscious/pulseless VT.
B. Periods of CPR should not be interrupted except in cases of need to manage airway (emesis, etc.)
C. For manual departments, check pulse only if organized rhythm. Start CPR if no pulse or asystole rhythm.
D. Any patient found unconscious, unresponsive with a systolic BP <60 should have CPR initiated. If a pulse is detected during resuscitation but systolic blood pressure < 60, resume CPR.
E. If at anytime 3 consecutive "no shocks" are advised, continue CPR without interruption until medics arrive.
F. Count out loud for chest compressions.
G. Cardiac arrest protocols may change. Always follow current agency protocols.

CARDIAC ARREST (CONT.)

DRESSING AND BANDAGING

If a patient's condition and time permits, perform dressing and bandaging as follows:

- Maintain body substance isolation (BSI) by wearing appropriate personal protective equipment.
- Control bleeding with direct pressure or pressure points. Use a pressure device or pressure dressing for severe, uncontrolled bleeding.
- Do not remove the dressing once applied. If bleeding continues, put new dressings over the blood-soaked ones.
- Secure the dressing with a bandage that is snug but does not impair circulation.
- Large, easily removed debris, such as glass, splinters, or gravel can be removed before bandaging. Secure large, deeply imbedded fragments or projectiles in place with the bandage.
- If possible, leave patient's fingers or toes exposed.
- Check circulation by feeling for a distal pulse or checking capillary refill.
- Elevate or immobilize the injured extremity, if possible.
- Cover eviscerated abdominal contents with a large multi-trauma dressing soaked with

DRESSING AND BANDAGING (CONT.)

sterile saline. Then apply an occlusive dressing, if available, to retain heat and moisture. Secure with tape.

AMPUTATION

Wrap amputated parts in sterile dressings.

Place amputated part in a watertight container and then in a second container.

Place the container on ice.

Do not submerge the amputated part in water or place directly on ice.

Rapid transport of the patient and the severed part is critical to the success of re-implantation. If transport of a patient is delayed, consider sending the amputated part ahead to be surgically prepared.

Do not use dry ice to cool a severed part. Ice and chemical cold packs are acceptable.

BURNS

For burned areas, easily removed debris should be taken off the burn. Cover the area with dry, sterile dressings.

Remove wet chemicals, such as acid, with repeated flushing. Remove dry substance by first brushing the area and then flushing.

ECG MONITORING

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

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

An approved course in ECG monitoring techniques and rhythm recognition.

Specific defibrillation/monitoring equipment, which will provide hard copy ECG rhythm strips for use by paramedics and others.

Medical Program Director approval for addition of ECG monitoring to EMT care plans.

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 pressure for 10 to 15 minutes.

Additionally, you can apply a cold pack to the bridge of the nose.

END OF LIFE ISSUES

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

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

- Injuries incompatible with life
- Lividity, rigor mortis
- A Do Not Attempt Resuscitation (DNAR) directive. This directive may be in the POLST (Physician Orders For Life-Sustaining Treatment) format. This is based on patient's wishes.
- "Compelling reasons" to withhold resuscitation can be invoked when written information is not available, yet the situation 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
  - Request from the family that no resuscitation effort be attempted

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.

END OF LIFE ISSUES (CONT.)

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

"Do not attempt resuscitation" does not mean "do not care." A dying patient for whom no resuscitation effort is indicated can still be provided with supportive care, which may include the following:

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

When in doubt, initiate resuscitation.

EPINEPHRINE (EPIPEN)

Indications For Use

EMTs may deliver epinephrine via an EpiPen injector for ANY case of suspected anaphylaxis (respiratory distress and/or hypotension must be present).

Seattle EMTs

- Patient (any age) has a history of same and a prescription for epinephrine
- Patient is less than 18 years of age with no prescription, but permission is obtained from parent or legal guardian. This may be written, oral or implied.

King County EMTs

There are no requirements for:

- Age
- Having a prescription
- Written/oral permission (beyond standard consent

If there is doubt about the need for EpiPen, consult with local paramedic or local control doctor.

Dosages

- Adult and children over 30 kg or 66 lbs: use EpiPen (0.3 mg)
- Child under 30 kg or 66 lbs: use EpiPen Jr. (0.15 mg)

EPINEPHRINE (EPIPEN) (CONT.)

Injection Procedure

Confirm that patient is experiencing anaphylaxis and meets above criteria.

1. Check medication date and that the EpiPen dose matches to patient's size.
2. Remove clothing and prep area of thigh with alcohol pad.
3. **Remove safety cap** and locate injection site on lateral thigh.
4. Place black tip of injector against thigh and push hard until injector activates.
5. Hold in place for 10 seconds. Note and document time of injection.
6. Remove injector, place in sharps container and massage site for 10 seconds.
7. Reassure patient and monitor for response/side effects to injection.
8. Continue to provide oxygen. Ventilate if necessary.
9. Monitor and document vitals every 5 minutes.
10. Update incoming medics on patient status and response to injection.

Any patient who receives an EpiPen (pre or post EMS arrival) should be transported (mode of transport depends on clinical findings and symptoms) and evaluated in a hospital.

GLUCOMETRY

Glucometry is an approved protocol but optional by individual departments.

Indications For Use

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

Contraindications

Children less than 5 years of age.

Use and application

Perform the testing procedure as outlined in the instructions for your specific device. All reading should be recorded on the incident response form.

Under no circumstances should the presence of a blood glucose monitor detract from basic patient care. (e.g., ABCs)

GLUCOMETRY (CONT.)

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

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

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

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

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

*If glucometry is available

HELICOPTER PROCEDURES

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

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

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

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

It is suggested that consultation with the responding medic unit take place 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.

MULTI-CASUALTY INCIDENT

An MCI by definition is any incident where the demands for patient care exceed the resources available. Successful incident command response uses two concepts.

1) Incident management system (IMS), which includes the incident commander (IC) and assignments of specific duties and authorities.
2) Triage for medical treatment of patients determined by the severity of the injury.

Incident Commander

The first officer on the scene becomes the Incident Commander (IC). This person remains in charge until a higher-ranking officer arrives and assumes command. The IC is responsible for the overall incident.

Major Responsibilities of the Incident Commander:

Assume Command.

Size-up the incident.

Identify the overall strategy.

Give clear, specific directions to responding units about where to park and their assignments.

Develop an effective organizational structure.

MULTI-CASUALTY INCIDENT (CONT.)

The IC is responsible for overall safety and welfare of all personnel as well as requesting and managing resources. An accountability system should be in place as well as other measures to assure safety.

Medical Group Supervisor

The Medical Group Supervisor (MGS) manages all teams within the Medical Group including triage, treatment, transportation, and morgue.

Major Responsibilities of the MGS:

Obtain briefing from IC.

Assign triage, treatment, and transportation team leaders.

Establish effective communications with team leaders.

Update IC on progress and needs.

The MGS may initiate specific tasks:

- Notify Hospital Control of the MCI if no transportation officer.
- Consider initiating the call-up of off-shift personnel and the activation of Special Assignment Units through the IMS.
- Request additional supplies and equipment through the IC.
- Maintain records and forward them to IC.

MULTI-CASUALTY INCIDENT (CONT.)

Medical Positions within the MCI Plan

IMS defines the chain of command led by an Incident Commander (IC), who is in charge of the overall operation. The chain of command is "who reports to whom."

In the medical area, team leaders report to the Medical Group Supervisor (MGS), who reports to the IC. (**NOTE**: the Operations Section Chief is an optional position.)

The Medical team leaders include:

Triage Team Leader

Treatment Team Leader

Transportation Team Leader

Morgue Team Leader

MULTI-CASUALTY INCIDENT

THE TRIAGE TEAM

Major Responsibilities:

- Obtaining the initial patient count for the IC.
- Performing the initial triage of all patients and applying tape.
- Confirming patient count and triage colors.
- Numbering the patients.
- Directing the work of litter-bearers.

TREATMENT TEAM LEADER

Major Responsibilities:

- Set up treatment areas: red, yellow, green, black. Assign leaders to each.
- Assure that all patients are taped, numbered, and tagged.
- Direct and supervise treatment area.
- Assure that proper treatment and decon is given.
- Prioritize patients for transportation.

TRANSPORTATION TEAM LEADER

Major Responsibilities:

- Set up ambulance staging area.
- Designate a Transport Staging Manager.

MULTI-CASUALTY INCIDENT (CONT.)

Maintain medical communications.

Document patient destination and number.

Communication with Hospital Control should be brief but should include:

Patient number

Patient Triage status (red, yellow, green)

Primary injury

Treatment provided

Any special information (pediatric, pregnant, etc.)

Confirm hospital destination

Primary Hospital Control is Harborview Medical Center: **206-731-3074** Call and ask for the "Charge Nurse." In the event that HMC is unavailable, the secondary Hospital Control is Overlake: **425-455-6941**

TRANSPORTING PATIENTS

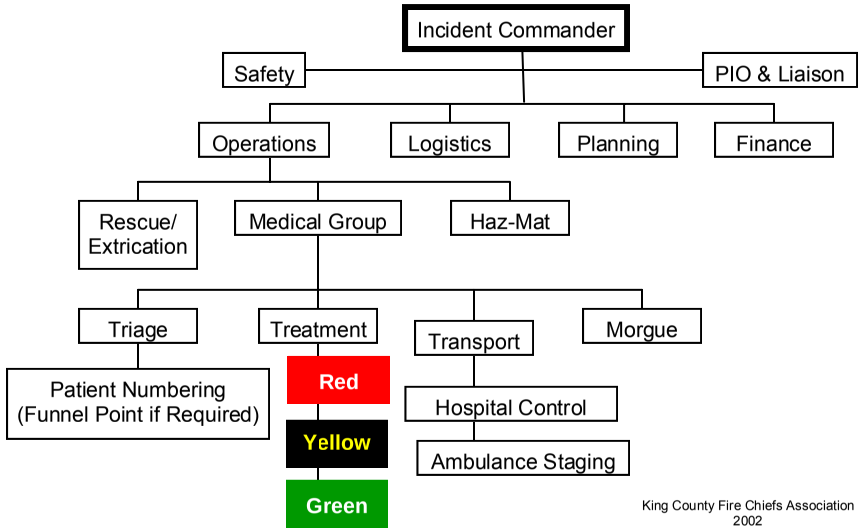
In order for patients to be transported, they must have:

Number

Triage color

Hospital destination

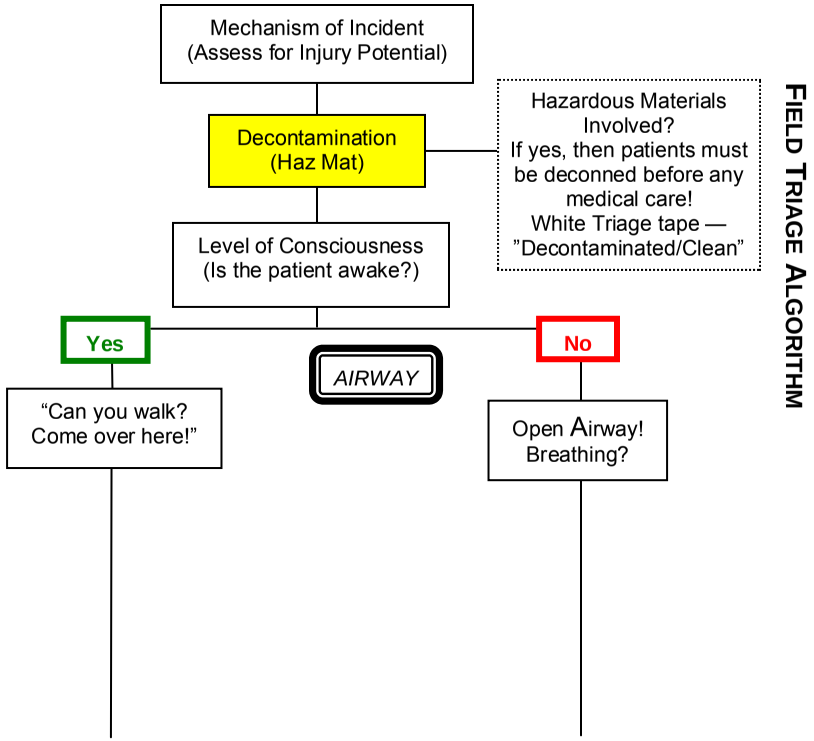
Transport vehicle



MCI ORGANIZATION CHART

PROCEDURES & POLICIES — MULTI-CASUALTY INCIDENT

PROCEDURES & POLICIES - FIELD TRIAGE ALGORITHM (ABC)



FIELD TRIAGE ALGORITHM

FIELD TRIAGE ALGORITHM (CONT.)

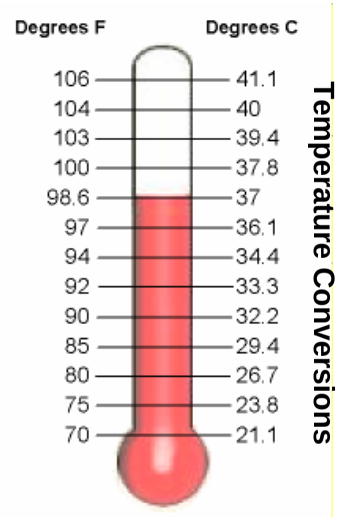
AVPU	
A	**Alert** – The patient's eye open spontaneously as you approach. The patient is aware and responsive to the environment. The patient appropriately follows commands.
V	**Verbal stimulus response** – The patient's eyes do not open spontaneously. The patient's eyes open to verbal command and the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

GLASGOW COMA SCALE

The **Glasgow Coma Scale** 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 opens	4	Oriented and talking	5	Obeys commands	6
Opens to voice	3	Disoriented and confused	4	Locates pain	5
Opens to pain	2	Inappropriate words	3	Withdraws from pain	4
No response	1	Incomprehensible	2	Flexes to pain	3
		No response	1	Extends to pain	2
				No response	1

PROCEDURES & POLICIES — NORMAL VITAL SIGNS BY AGE



Temperature Conversions

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

NORMAL VITAL SIGNS BY AGE

NOXIOUS STIMULI

Indications

Suspected traumatic brain injury that requires the Glasgow Coma scale measurement

Significant drug and/or alcohol overdoses

Suspected stroke

The only approved methods of delivering noxious stimuli:

- Firm earlobe pressure (Figure 1)
- Firm pressure behind earlobe (Figure 2)

Figure 1

Figure 2

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

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

OXYGEN DELIVERY

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	Nonrebreathing mask
High flow with ventilation	15+ liters/ minute	Bag-valve mask with reservoir

CONSCIOUS PATIENT WITHOUT RESPIRATORY DISTRESS

Begin with 2 liters per minute via nasal cannula as history is obtained. If no contraindications, you may increase to 4 liters per minute. Some patients may not require oxygen at all (e.g., a lacerated finger), but it is always best to provide oxygen when in doubt.

CONSCIOUS PATIENT WITH RESPIRATORY DISTRESS

Increase oxygen delivery according to the patient's condition moving from nasal cannula to nonrebreathing mask. Use respiratory rate,

OXYGEN DELIVERY (CONT.)

effort, exchange, ease of speaking, skin signs, and level of consciousness as a guide. When using a nonrebreathing mask, remember to use a liter flow that is high enough to keep the bag inflated at least 1/3 full with the patient's deepest inspiration.

CONSCIOUS PATIENT WITH SEVERE RESPIRATORY DISTRESS

Patients in severe respiratory distress may need assistance to breathe, as provided by a BVM with high flow oxygen. These patients may present with inability to speak, extreme exhaustion, minimal air movement, cyanosis, agitation, sleepiness, or a decreasing LOC. Examples include patients with chest or throat injury, airway obstruction, CHF, COPD, asthma, and near drowning. To assist respirations in a conscious patient, first explain the treatment to the patient then gently place the mask over the patient's nose and mouth and begin ventilations. Observe chest and abdomen and time the assisted breaths to coincide with the patient's or coach the patient to breathe with bag compressions.

UNCONSCIOUS PATIENT WITH SUFFICIENT RESPIRATORY EFFORT

Oxygen delivery may range from low-flow with a nasal cannula to high-flow with a nonrebreathing mask. Patient's level of

OXYGEN DELIVERY (CONT.)

consciousness and vital signs (especially respiratory rate and effort), color, and nature of illness should determine oxygen flow level. Continually evaluate respiratory rate and effort and do not hesitate to assist respirations if necessary.

UNCONSCIOUS PATIENT WITH INSUFFICIENT OR NO RESPIRATORY EFFORT

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

SPECIAL NOTE: COPD (emphysema, bronchitis, asthma)

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 could theoretically depress their respiratory drive. Therefore, it is advisable to provide COPD patients with lower levels of oxygen initially, as long as they are not in severe respiratory distress. Two liters per minute by nasal cannula is usually sufficient in

OXYGEN DELIVERY (CONT.)

this situation. If a patient with COPD presents in respiratory distress and does not improve with low levels of oxygen, increase oxygen up to four (4) liters per minute.

NOTE: With a COPD patient, King County EMTs have the option of using a nonrebreather if nasal cannula at four (4) liter per minute is inadequate.

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

If a COPD patient becomes unresponsive and/or stops breathing, ventilate via BVM with a high flow oxygen.

CAUTION: Overventilation may worsen 'air trapping' and could cause pneumothorax.

SPECIAL NOTE: Infant And Young Child

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

PATIENT POSITIONING

The treatment plan for every patient should include consideration for patient positioning. Proper positioning can reduce pain, improve physiological function, and improve the patient's sense of well-being.

There are three positions to consider:

- Recovery
- Semi-reclining
- Trendelenburg

RECOVERY POSITION

This position is used for non-traumatic patients who are unresponsive but breathing. It protects the airway from vomit and secretions. (Figure 3)

The following steps are recommended:

- Kneel beside the patient and straighten the legs.
- Place the patient's arm that is nearest to you at a right angle to body, elbow bent, palm up.
- Place the other arm across the chest/ abdomen (Figure 1).
- *If the patient is small, bring this arm farther across so that the back of the hand can be held against the patient's nearest cheek.*

PATIENT POSITIONING (CONT.)

Grasp the patient's far-side thigh above the knee; pull the thigh up towards the patient's body (Figure 1).

Figure 1

Place your other hand on the patient's far-side shoulder and roll the patient toward you (Figure 2). Begin moving the patient's uppermost hand toward the patient's nearest cheek.

Figure 2

PATIENT POSITIONING (CONT.)

Adjust the leg you are holding until both the hip and knee are bent at right angles.

Tilt the patient's head back and place the uppermost hand under the patient's cheek. Use this hand to maintain head tilt (Figure 3). Use chin lift if necessary.

Figure 3

Monitor respirations closely.

In suspected spinal cord trauma/injury first immobilize the patient with the appropriate size c-collar and backboard. If the patient is unconscious, monitor and protect the airway, if necessary, turn patient and backboard 90 degrees to facilitate drainage.

SEMI-RECLINING (SEMI-FOWLER'S)

In the semi-reclining position (Figure 4) a patient is usually sitting at a forty-five degree angle. A gentle knee bend adds comfort and helps to maintain the upright position. Additional pillows behind the head and knees may improve comfort. Patients with mild to moderate respiratory symptoms may benefit from this position.

PATIENT POSITIONING (CONT.)

Figure 4

TRENDELENBURG POSITION (SHOCK POSITION)

In this position the head is below the trunk by eight to twelve inches and the patient is supine (Figure 5). The use of this position will increase venous return to the heart resulting in increased blood pressure.

Figure 5

PATIENT RESTRAINT

Two factors determine whether a device is considered a restraint: *reason for use and consent.* If the reason for use of a device is to prevent movement and it is done without the consent of the patient (or against the wishes of the patient), it is a restraint.

Generally, restraints are used in the prehospital environment whenever dangerous behavior is encountered. Dangerous behavior is regarded as behavior that is detrimental to the patient or to those attempting to render care. The provider has a clear duty to exercise increased vigilance for the safety of the patient, because the patient is unable to self protect while restrained. Likewise, the safety of the responders should be ensured.

PROCESS OF RESTRAINT

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

Self-control. The first step is to encourage the patient to exercise all the self-control he or she possesses. A statement such as "I know you don't want to hurt yourself or anyone else. I want you to try to stay in control. I know you can do it" is an example of calling, with encouragement, for self-control.

PATIENT RESTRAINT (CONT.)

Offer to help. Anxiety can interfere with concentration and an offer of assistance should reduce anxiety. A statement such as "I want to assure you that we will help you. We will not let you hurt yourself or someone else" is an example of an offer to help.

Be ready and able to overpower patient. Never attempt physical restraint without the resources needed to safely overpower a patient.

Physical restraint. This is the time when most injuries tend to occur, but the EMT can greatly reduce the potential for injury by eliminating the opportunity for the patient to prepare for battle. Early and swift movements reduce injuries to a patient and EMS providers. 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 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. A patient may become violent.

PATIENT RESTRAINT (CONT.)

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.

Use commercially available soft restraints or improvise soft restraint such as a towel and one-inch tape (Figure 6). Secure the restraint to another extremity or stretcher (Figure 7).

Figure 6

Figure 7

After the restraints are applied to legs and arms, a patient should be placed in a **supine position** with legs secured to a backboard or stretcher. One arm secured high above the head and the other low at the patient's side and

PATIENT RESTRAINT (CONT.)

both secured to the backboard or stretcher. Additional restraint should be placed across the lower part of the chest, the hips, and upper thighs.

Once a patient is restrained, he or she should be carefully monitored to avoid airway obstruction. An NRM with 6 liters/min of oxygen flow may be applied to protect the EMS personnel from spit.

DOCUMENTATION

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

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

PERSONAL PROTECTIVE EQUIPMENT (PPE)

INFECTIOUS DISEASE PREVENTION

HANDWASHING

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

Wash Hands

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

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

FULL PPE *for possible infectious contacts*

Donning Sequence (MEGG)

- **M**ask* > **E**ye Protection > **G**own > **G**loves
- *Mask patient (if possible)*

Doffing (removal) Sequence

- Gloves > Gown > **Hand cleaner**
- Eye Protection > Mask > **Hand cleaner**
- Handle as contaminated waste
- Decon Eye Protection

*Fit tested

PERSONAL PROTECTIVE EQUIPMENT (PPE) (CONT.)

INFECTIOUS DISEASE

Febrile Respiratory Illness

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

Full PPE (MEGG)

- **M**ask*, **E**ye Protection, **G**owns, **G**loves
- *Mask patient (if possible)*
- Limit patient contacts

After Patient Contact

- Remove PPE – (approved sequence)
- Dispose of PPE as contaminated waste
- On scene decon - eye protection & equipment w/ germicidal cleaner
- Hospital decon - eye protection, equipment and apparatus

At station

- Decon affected equipment & contacts (kits, BP/steth, radios, clipboards, etc.)
- Wash hands before leaving apparatus floor.

*Fit tested

PHYSICAL ABUSE AND NEGLECT OF CHILDREN AND THE ELDERLY

Signs and Symptoms of suspected abuse and neglect include:

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

Any suspicious circumstances, suspected abuse or neglect must immediately (within 24hrs) be reported to the local law enforcement agency. Care for the patient and transport to the appropriate medical facility should follow normal standards of care as outlined in these patient care guidelines.

POSTURAL VITAL SIGNS

Indications For Measurement Of Posturals

Acute volume loss (such as suspected GI bleeding or internal hemorrhage)

Generalized weakness

Complaint of dizziness, lightheadedness, or fainting

Prolonged vomiting or diarrhea

Contraindications

Symptomatic hypotension while supine (systolic blood pressure less than 90 mmHg)

Third trimester bleeding

Trauma patients

Patient with suspected cardiac chest pain

To Check For Postural Vital Signs

Obtain blood pressure and heart rate after two (2) minutes in supine position.

Stand patient upright slowly (**caution:** lay down patient promptly if he or she becomes dizzy or lightheaded).

After patient stands for one (1) minute obtain blood pressure and heart rate.

If fainting or light headedness develops return patient to supine position.

Positive findings

POSTURAL VITAL SIGNS (CONT.)

Increase in pulse of 20/minute or more and/ or a 20 mmHg or more drop in systolic BP from supine to standing with associated symptoms

Dizzy, lightheaded, or fainting while standing

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

PULSE OXIMETRY

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

Indications For Use

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

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

Contraindications

- Patients less then 5 years of age.

Use and Administration

Place the probe on a clean digit. This should be accomplished simultaneously with the initial administration of oxygen allowing for a “room air” estimate.

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

PULSE OXIMETRY (CONT.)

NOTE

Pulse oximetry is inaccurate in the following clinical situations:

- Cardiac arrest
- Shock
- Hypothermia
- Carbon monoxide poisoning
- Jaundice
- Presence of nail polish

Decisions about patient care should be based on a patient's complaint and presentation and should not be based solely on a pulse oximeter reading.

Under no circumstances should the presence of a pulse oximeter detract from patient care.

REPORTABLE EXPOSURES

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

An exposure only occurs if:

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

Steps to take following exposure:

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

Follow individual department's exposure control policy. (see also PPE page 104).

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

Consult EMS Online in the event of a serious infectious disease outbreak.

NOTES

NOTES

SICK/NOT SICK

The SICK/NOT SICK approach to rapid patient assessment has become a mainstay in determining the physiologic status of a patient in Seattle/King County. Whether it is medical or trauma, adult or pediatric, SICK/NOT SICK is the tool of choice for rapid patient assessment.

This revised edition of the Patient Care Protocols incorporates the SICK/NOT SICK approach which leads to the early recognition of critical (Sick) and non-critical (Not Sick) patients and, ultimately, rapid and appropriate patient 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 in determining SICK/NOT SICK and may alone determine into which category the patient is placed.

NOTE

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

SICK/NOT SICK (CONT.)

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

Example: *Your crew is dispatched to a 52-year-old male, 15 foot fall from the roof. You find him being attended by his wife. He is conscious. He is breathing with distress @ 32 breaths per minute. Skin is pale and a radial pulse is present @ 116 bpm. He has an open chest wound, left side being covered by his hand.*

- Chief complaint: lethargy, MOI—15' fall from roof
- Respiration: 32/minute
- Pulse: 116/minute (radial)
- Mental status: lethargic
- Skin signs: pale
- Body position: found supine

This patient is considered Sick (unstable/critical) by multiple clinical indicators.

The pediatric SICK/NOT SICK approach uses an innovative triad of indicators collectively called the "pediatric assessment triangle." The

SICK/NOT SICK (CONT.)

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 to the Skin

Example: *You and your partner are seeing a 4-year-old male with an obvious distal forearm fracture resulting from a fall from a swing. He is conscious and crying, without respiratory distress. His skin signs are pink, warm and dry. The MOI is a fall from a swing (approximately four feet onto a rubber mat).*

- Chief complaint: arm pain, MOI, fall with obvious forearm fracture (IOS - low)
- Appearance: conscious alert and crying
- Work of breathing: without complaint
- Circulation to skin: pink, warm and dry

This patient is injured but considered Not Sick (stable/not critical) according to the pediatric assessment triangle.

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

The Clinical Picture

SICK ← **DECIDE** → **NOT SICK**

Start Report to ALS
100% 0_2 NRM or BVM
Focused Hx/Physical Exam
Appropriate Position
Rapid Transport/ALS
Detailed Physical Exam
Ongoing Assessment

Low/Moderate Flow 0_2
Focused Hx/Physical Exam
Detailed Physical Exam
Appropriate Treatment
Appropriate Transport
Ongoing Assessment

Request ALS, Give Short Report

*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

The Clinical Picture

SICK ← **DECIDE** → **NOT SICK**

Start Report to ALS
Rapid Extrication → 100% 0_2 NRM or BVM
Focused Hx/Physical Exam
Immobilize Spine
Rapid Transport/ALS
Detailed Physical Exam
Ongoing Assessment

Request ALS, Give Short Report

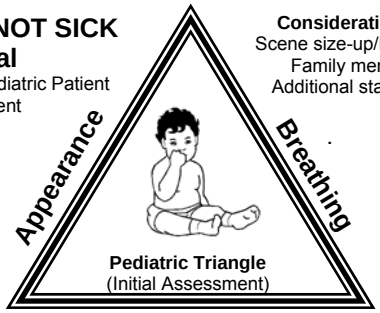
Low/Moderate Flow 0_2
Spinal Stabilization
Focused Hx/Physical
Extricate/Immobilize
Detailed Physical Exam
Appropriate Transport
Ongoing Assessment

*MOI—Mechanism of Injury

SICK/NOT SICK
Medical

Rapid Pediatric Patient Assessment

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



Pediatric Triangle
(Initial Assessment)

Circulation/Skin Color

DECIDE

SICK

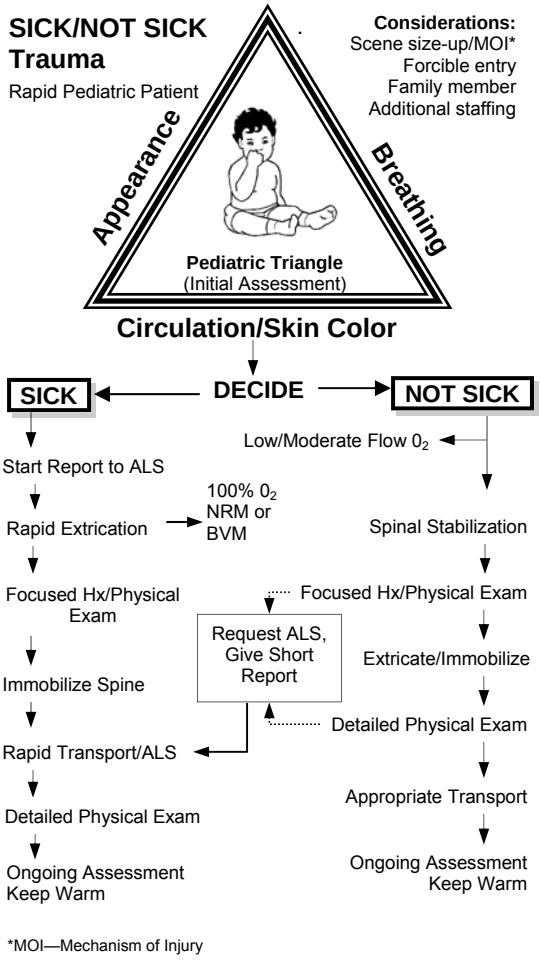
- Start Report to ALS
- 100% 0_2 NRM or BVM
- Focused Hx/Physical Exam
- Appropriate Position
- Rapid Transport/ALS
- Detailed Physical Exam
- Ongoing Assessment Keep Warm

NOT SICK

- Low/Moderate Flow 0_2
- Focused Hx/Physical Exam
- Detailed Physical Exam
- Appropriate Treatment
- Appropriate Transport
- Ongoing Assessment

Request ALS, Give Short Report

*NOI - Nature of Illness


SICK/NOT SICK
Trauma
Rapid Pediatric Patient
Considerations:
Scene size-up/MOI*
Forcible entry
Family member
Additional staffing
Appearance
Breathing
Pediatric Triangle
(Initial Assessment)
Circulation/Skin Color
SICK
DECIDE
NOT SICK
Low/Moderate Flow 0_2
Start Report to ALS
100% 0_2 NRM or BVM
Rapid Extrication
Spinal Stabilization
Focused Hx/Physical Exam
Focused Hx/Physical Exam
Request ALS, Give Short Report
Extricate/Immobilize
Immobilize Spine
Detailed Physical Exam
Rapid Transport/ALS
Appropriate Transport
Detailed Physical Exam
Ongoing Assessment
Keep Warm
Ongoing Assessment
Keep Warm
*MOI—Mechanism of Injury

SPINAL IMMOBILIZATION

The following summary of spinal immobilization 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 long backboard, as described below, or until another EMT takes over. There should be no pulling or traction taken.)
- Measure and apply, properly-sized cervical collar.
- Apply extrication device, using a short backboard or KED, or long board. 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.

SPINAL IMMOBILIZATION (CONT.)

- Place patient on a long backboard and immobilize chest by crisscrossing over shoulders, across chest to the hips.
- Assess ventilation after tightening straps to ensure that respiratory effort is not impaired.
- Immobilize the pelvis by crisscrossing or by strapping straight across. Use caution with pelvic or abdominal injuries.
- Put one strap across the thighs above the knees and one strap across the lower extremities. An additional strap may be placed across the feet.
- Stabilize the patient's head using a commercial immobilization device, rolled towels, or blankets. Secure patient's head to the backboard with two-inch adhesive tape across forehead or approved head securing device.
- 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 distal to injury before and after splinting.
- Immobilize joints above and below injured bones.
- For joint injuries, leave in place and immobilize the bone above and below the joint
- It may be necessary on a mid-shaft (center 1/3) fracture to realign angulated injuries.
- Pad splints well.
- Elevate extremity after splinting, if possible.
- Monitor CMS after splinting.

GUIDELINES FOR SPECIFIC INJURIES

Realignment of Long Bone Fractures

Attempt to realign (open or closed) long bones that are angulated in the middle 1/3 then splint.

SPLINTING (CONT.)

Long-bone fractures, which occur in the proximal or distal 1/3, that may or may not involve a joint, may be realigned if compromise of distal circulation or nerve function is detected and definitive care is delayed.

Realignment may sometimes be necessary to facilitate packaging for transport.

Check and document CMS before and after splinting and/or realignment.

Dislocations/Sprains

Splint dislocations or other joint injuries in the position found. Exception: Loss of a distal pulse and neurological function and definitive care is delayed. In that case, attempt to straighten into anatomical position until the pulse returns, excessive pain is felt, or resistance is encountered. Support with blanket, pillow, or well-padded splint. Elevate the limb. Pack the injured area in ice or use an ice pack.

Pelvic Fractures

Immobilization of these fractures should be accomplished by use of a bed sheet.

Fold sheet lengthwise into 8” to 14” width.

SPLINTING (CONT.)

Place beneath patient; twist then wrap ends around patient, crossing over pelvic area (Figure 1).

Tie sheet with square knot to apply moderate side-to-side and front to back pressure (Figure 2).

Secure the ends to the backboard.

Figure 1

Figure 2

TRACTION SPLINTING

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

Guidelines For Applying A Traction Splint

At least two EMTs are required to apply a traction splint.

Remove or cut away clothing. Dress and bandage significant wounds using a sterile

SPLINTING (CONT.)

dressing. Manually immobilize the injured extremity prior to dressing/bandaging. Check distal CMS before and after manipulation.

Objectives:

- **Determine SICK/NOTSICK**
- Control Bleeding
- Properly measure splint

- Apply traction
- Apply splint

- Reassess CMS and vital signs

TASER DART REMOVAL AND CARE

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

Consider scene safety and measures to protect yourself and other rescuers from a potentially violent patient in situations when a TASER gun 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, you can leave him or her in police custody.

This skill may be performed by EMTs and ALS providers. (Depending on local protocol.)

ALS Indicators

- Compromise in ABCs

BLS Indicators

- Taser dart imbedded in skin

BLS Care

- 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

TASER DART REMOVAL AND CARE (CONT.)

  - Dispose of darts in sharps container or TASER cartridge
- Police must be in custody of patient
- Restrain if needed

Removal Procedure

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

- Drug/alcohol intoxication
  - Behavioral problems
  - Trauma, etc.
- Bandage wounds as appropriate
- Document situation and patient contact thoroughly

Patient Disposition

- Release to law enforcement if indicated
- Transport with law enforcement support if:
  - Eye, face, neck, breast or groin are involved
  - ALS indicated

TASER DART REMOVAL AND CARE (CONT.)

- Law enforcement officer requires medical evaluation. Police protocol may require transport. This may be by PD or ambulance.

- Follow Patient Care Guidelines regarding restraint of aggressive or violent patients

Burn Hazard

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

TEETH

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

TRANSPORT AND DESTINATION

Transport Options

In deciding what is best for the patient, you have **several transport options**:

- Paramedic Transport
  All **"Sick"** patients and all patients with unstable vital signs should be transported by medic unit (when available). If no medic unit is available, begin transport and rendezvous. All patients transported by paramedics must go to a hospital.
- BLS Transport (via private ambulance or fire department BLS unit).
  Stable patients who require medical attention or oxygen during transport may be transported with a BLS vehicle. In deciding whether to call for private ambulance or transport via fire department BLS unit, departmental policies should be followed.

  Before requesting a private ambulance, always inform the patient that you would like to call for a private ambulance, and that the ambulance company will charge a fee for transportation and service.

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 or contracts require code-red response.

TRANSPORT AND DESTINATION (CONT.)

- 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. Obviously the patient should not be the driver.
- Taxi Transport
  Some departments utilize a taxi voucher program for patients who travel to a clinic, urgent care clinic, free-standing emergency department, hospital based emergency department. These patients must meet the following criteria:

  1. Paramedic care is NOT required
  2. Patient is ambulatory
  3. Patient has a non-urgent condition (clinically stable) including **low index of suspicion** for:
     a. Cardiac problem
     b. Stroke
     c. Abdominal aortic aneurysm
     d. GI bleed problems
     e. Major mechanism of injury
  4. Patient must not have
     a. Need for a backboard
     b. Uncontrolled bleeding
     c. Uncontrolled pain
     d. Need for oxygen (except patient self administered oxygen)

TRANSPORT AND DESTINATION (CONT.)

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.

Destination Options

In deciding what is best for the patient you have **four destination 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 the condition should worsen.
- 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:
  1. Paramedic care is NOT required
  2. Patient is ambulatory
  3. Patient has a non-urgent condition (clinically stable) including
     a. **Low index of suspicion** for:
        - Cardiac problem
        - Stroke
        - Abdominal aortic aneurysm
        - GI bleed problems

TRANSPORT AND DESTINATION (CONT.)

   b. Low index of suspicion for major mechanism of injury

4. Patient must not have
   a. Need for a backboard
   b. Uncontrolled bleeding
   c. Uncontrolled pain
   d. Need for high flow oxygen

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

- Free-standing Emergency Department: Selected patients may be transported to a free-standing emergency department by EMTs if they meet the following criteria:

  1. Paramedic care is NOT required
  2. Patient has a non-urgent condition (clinically stable) including:
     a. Low index of suspicion for cardiac, stroke, abdominal aortic aneurysm, or GI bleed problems
     b. Low index of suspicion for major mechanism of injury
  3. Patient is willing to be transported to the free-standing emergency department.

TRANSPORT AND DESTINATION (CONT.)

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

- Hospital Emergency Department
  Not all patients who require further medical attention must be evaluated in an emergency department. Patients with minor problems and stable vital signs may be referred to an urgent care clinic.

INDEX

INDEX

INDEX

INDEX