WHATCOM COUNTY EMS/TC COUNCIL

TRANSPORT GUIDELINES

Conditions
Policies and Procedures

Education Committee

2/1/2011

CONTENTS

PART I - CONDITIONS
ABDOMINAL COMPLAINTS

ALS Indicators

Signs and symptoms of shock which include:

- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 36)
- Hypotension (systolic BP less than 90 mmHg) Unstable vital signs

Positive postural changes. (See page 56)

Evidence of ongoing bleeding

Severe unremitting pain unrelieved by position

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.

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 36)
- Hypotension (systolic BP less than 90 mmHg)

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

First time seizure

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

Typical seizure pattern for the patient with stable vital signs

BLS Care

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Protect patient from injury, remove objects from mouth and upper airway, do not restrain patient during seizure, remove hazardous objects near patient.

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

- Wheezing, difficulty swallowing, hoarse or changed voice, labored breathing

Signs and symptoms of shock which include:

- Poor skin signs (pale, sweaty)
- Sustained tachycardia. (see page 36)
- Hypotension (systolic BP less than 90 mmHg) with an appropriate clinical setting

Diffuse hives (urticaria) away from the area of contact

Use of Epinephrine (see page 43)

BLS Indicators

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

Stable vital signs

No anaphylaxis

BLS Care

Epinephrine for anaphylaxis (see page 43).

Oxygen as needed.

Reassure patient.

Remove stinger by scraping away from puncture site.

Any patient who receives Epinephrine (pre or post EMS arrival) should be transported to the ED, preferably by ALS

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
Audible wheezing not improved with inhalers
.

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.
Monitor vital signs every five to ten minutes.

BEHAVIORAL

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 EMT's feel patient needs further evaluation or for responder safety).

Use restraints when warranted

Transporting handcuffed patients (page 52)

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

Page 8, Whatcom County Protocols: Competent adults have the right to refuse medical care in most circumstances. You must first determine that the patient is competent to refuse care. No one can refuse medical care for potentially life threatening conditions for a minor or incompetent adult.

Contact Medical Control and inform the patient of the recommendation for treatment.

Complete the Release of Responsibility Form on any patient that refuses care.

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 (Partial or full thickness)

Second or third degree burns covering greater than 20% of the body (Partial or full thickness)

Severe pain (request ALS for pain control)

BLS Indicators

All other burns

BLS Care

First degree burn – Superficial

- Cool, moist pads ; irrigation with sterile water of < 10% Body Surface Area

Second degree burn – Partial thickness

- Cover with dry dressing or sheets
- **DO NOT** apply ointment or **creams**

Always be alert to possible airway involvement.

BURN CLASSIFICATIONS	
DEPTH	**SUPERFICIAL** **PARTIAL THICKNESS** **FULL THICKNESS**
EXTENT	**USE THE RULES OF NINES** **FOR EXAMPLE;** **18% OF BODY SURFACE**
CAUSE	**THERMAL** **ELECTRICAL** **CHEMICAL** **LIGHT** **RADIATION**
LOCATION	**CRITICAL LOCATIONS:** **FACE AND UPPER AIRWAY** **HANDS AND FEET** **GENITALS OR GROIN REGION** **BURNS THAT ENCIRCLE BODY PARTS**

You can use these parameters to guide your assessment but don't spend an excessive amount of time calculating the precise percentage of the burned area. Keep in mind the age especially patients under the age of 6 or over the age of 60 are more likely to be critical.

CHEST DISCOMFORT

ALS Indicators

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

Altered LOC

Use of nitroglycerin

Unstable vital signs

Signs and symptoms of shock which include:

- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 36)
- Hypotension (systolic BP less than 90 mmHg) Discomfort, pain, or unusual sensations between the navel and the jaw if the patient is 35 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 35 years old and no cardiac history **and** stable vital signs and no associated symptoms

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 34-35).

Position of comfort.

Reassure patient.

Monitor vital signs every 5 minutes.

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

COLD-RELATED

ALS Indicators

Decreased/altered LOC

Temperature less than 95° F (35°C) oral or tympanic with evidence of exposure

Cessation of shivers in a cold patient

Significant co-morbidities (e.g., elderly, Illness, circumstances, trauma, alcohol, or drugs)
Cardiac arrest

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

BLS Indicators

Cold exposure, temperature greater than 95°F (35°C), normal vital signs and no abnormal LOC

Frostbite with temperature greater than 95°F (35°C), normal vital signs and no abnormal LOC

BLS Care (Hypothermia)

Remove patient from the cold environment and protect the patient from further heat loss.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Remove wet clothing.

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 slow CPR (20-30 times/minute) and apply AED.

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

If breathing, assume there is cerebral perfusion. Therefore, "NO" CPR.

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

COLD-RELATED (CONT.)

BLS Care (Frostbite)

Protect cold-injured part from further injury.

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

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

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

Do not rub or massage injured tissue.

Transport to an emergency room.

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

Audible crackles, or crackles clearly heard by auscultation on both sides

Decreased LOC

Signs and symptoms of shock which include:
Poor skin signs (pale, sweaty)
Sustained tachycardia
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.

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

If hypotensive, place patient in supine position.

Reassure patient.

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

Failure to respond to oral glucose

Suspected diabetic ketoacidosis

Seizures with unstable blood glucose

Blood glucose < 80 and unable to safely eat or drink

Blood glucose > 300 with decreased LOC or unstable vital signs

BLS Indicators

Normal or mild reduction in LOC

Gag reflex intact, as indicated by swallowing

Patient can protect airway

Normal vital signs

Hypoglycemia relieved by oral intake with blood glucose >80

Hyperglycemia with normal vital signs

BLS Care

Request paramedics if indicated.

Perform blood glucometry

Provide supplemental oxygen and/or ventilatory assistance as necessary.

If hypoglycemic and patient is able to swallow, position upright and give food or juice

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.

Special Instructions for Diabetic Patients

Patients with hypoglycemia who have responded to oral glucose may be left on scene. These patients must have a repeat glucose level of 80 mg/dl or higher documented and **after-care instructions** must be left with the patient. For patients on oral diabetes medications, contact medical control. In general, they must be transported as the medications may cause continued drop in blood sugar..

DROWNING

ALS Indicators

Any underwater rescue

Altered LOC

Respiratory distress

Labored breathing

Hypotension (systolic BP less than 90 mmHg)

Temperature less than 35°C (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.

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 if airway compromise

Full neurological and orientation exam for baseline

Call **D**ivers **A**lert **N**etwork (1-800-446-2671) if unsure of symptoms or for further treatment guidance www.diversalertnetwork.org

EYE INJURIES

ALS Indicators

Major mechanism of injury

Penetrating injuries to eye

Chemical Burns

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.

Apply dry dressing to closed lacerated lid. Bandage both eyes.

GYNECOLOGIC

ALS Indicators

Decreased/altered LOC
Hypotension (systolic BP less than 90 mmHg)
Moderate to severe hypertension (140 mmHg systolic or greater) in a pregnant woman

Seizures
Hypertension (140 mmHg systolic or greater) in known pregnancy
Severe unremitting pelvic pain
Excessive vaginal bleeding (> 2 menstrual pads)
Possible ectopic pregnancy
Abdominal pain with possible pregnancy

BLS Indicators

Limited vaginal bleeding with stable vitals and no significant postural changes
Pelvic pain or discomfort with stable vitals and no significant postural changes

BLS Care

Request paramedics if indicated.
Reassurance and emotional support.
Monitor vital signs.
Direct pressure over lacerations.
Provide supplemental oxygen as needed.
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 significant drug or alcohol use

Normal LOC

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. 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, head bed (or a suitable stabilization device such as a blanket) and backboard, If unable to realign then secure in the original position.

Helmet Removal

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

All other non-fitted helmets may be removed as soon as possible (E.G., Bicycle Helmets, skateboard helmets, rollerblade helmets.)

HEAT RELATED

ALS Indicators

Decreased/altered LOC

Hot dry skin in the presence of elevated temperature

Sustained tachycardia

Hypotension (systolic blood pressure less than 90 mmHg)

Positive postural changes

BLS Indicators

Heat related cramps

BLS Care

Request paramedics if indicated.

Remove patient from the hot environment and place patient in a cool environment (back of air-conditioned aid unit with air conditioner running on high).

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.

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).

Avoid shivering

OBSTETRIC

ALS Indicators

Imminent birth

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

Complications with this pregnancy such as:

- Placenta previa
- Abruptio placenta
- Gestational diabetes
- 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

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.*

OBSTETRIC (CONT.)

Imminent Delivery Instructions

Prepare delivery area (out of public view).

Position mother in semi-reclining position.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Encourage mother to breathe deeply between contractions and push with contractions

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

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

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

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

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

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 and intact distal PMS

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.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Nothing by mouth.

Gently support injured part (see page 65).

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 in position of comfort or with spinal immobilization if indicated

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

Orthopedic (cont.)

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 and transport is prolonged.

Realignment may sometimes be necessary to facilitate packaging for transport.

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

Pelvic Fractures (see splinting page 66)

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.***

PEDIATRIC FEVER AND INFECTION

ALS Indicators

Decreased LOC

Respiratory distress

Seizure

- Respiratory distress or airway compromise
- First time seizure
- Recurrent seizure
- Prolonged, depressed LOC

Fever/Infection

- Signs/symptoms of meningitis: stiff neck, legs contracted, red blotchy skin, petechaie, high fever

BLS Indicators

Febrile seizure (generalized tonic/clonic- see below) with history of same and recent illness

BLS Care

Use **Pediatric Assessment Triangle**.

Request paramedics if indicated.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Monitor vital signs.

Place patient in a position of comfort.

For seizures, place child on side to protect airway.

May assist caregiver with medication to reduce temperature (e.g. Tylenol (acetaminophen), or Motrin (ibuprofen) as indicated by package.

Aspirin is contraindicated for children

If febrile, attempt to reduce patient's temperature by removing clothes and applying cool towels.

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 <u>not</u> 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 or rales

Use of Epi

Sustained tachycardia with other signs/symptoms of respiratory distress

BLS Indicators

Respiratory complaints due to common causes such as a cold, flu, bronchitis

Respiratory complaints of a chronic but stable nature

Respiratory complaints with normal vital signs and adequate oxygenation with treatment

Patent airway

BLS Care

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Obtain oximetry reading with respiratory rate

Assist patient with his or her medications.

Administer Epinephrine if indicated for anaphylaxis (see page 43).

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.

Obtain blood glucose.

SOFT TISSUE

ALS Indicators

Significant head injury

Signs and symptoms of shock which include:

- Poor skin signs (pale, sweaty)
- Sustained tachycardia (see page 36)
- Hypotension (systolic BP less than 90 mmHg) Soft tissue injuries that might compromise the airway

Excessive or uncontrolled bleeding

Altered LOC

High index of suspicion based on mechanism of injury for chest, pelvis or head injuries

BLS Indicators

Conscious, alert and oriented

Stable vital signs

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

Single digit amputations (see page 41).

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

BLS Care for OPEN Soft Tissue Injuries

Request ALS if indicated.

Provide supplemental oxygen and/or ventilatory assistance as necessary.

Maintain an open airway.

Ensure adequate breathing.

Control bleeding.

Maintain normal body temperature.

Monitor vital signs every 5 minutes.

Spine protection, if indicated.

Special Instructions for OPEN Soft Tissue Injuries

Control bleeding with direct pressure on the area.

Use tourniquet for severe, uncontrolled extremity bleeding.

Amputation (see page 41)

Removal of Foreign Objects

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

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

SOFT TISSUE (CONT.)

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.

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 65).

STROKE

ALS Indicators

Unconsciousness

Severe hypertension (blood pressure greater than 200mmHg systolic or 110 mmHg diastolic)

Hypotension and severe bradycardia

Seizures without history

Severe headache/vomiting

Uncontrolled airway and respiratory problems

Progression of stroke symptoms

BLS Indicators

Stroke signs with onset greater than 2 hours or unknown

Airway Secure

BLS Care

Reassure patient. Patient may be fully alert but nonverbal

Determine time onset of stroke if possible

Position patient in upright position

Open and manage airway

Deliver oxygen and/or ventilatory assistance as necessary.

Maintain normal body temperature.

Protect paralyzed limbs from injury

Monitor vital signs.

Perform **Miami Pre-hospital Stroke Exam or Cincinnati Stroke Scale**

Obtain blood glucose

.

STROKE PLAN

- If a stroke is of recent onset (less than 2 hours) very short scene times and transport times are critical.
- Notify med control 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 the Emergency Department to determine eligibility for clot dissolving medication

Miami Prehospital Stroke Exam

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

Mental Status	Level of consciousness (AVPU) Speech: have patient repeat “You can’t teach an old dog new tricks.” Abnormal = wrong words, slurred speech, no speech Orientation questions (age, month) Simple commands (close eyes, open eyes)
Arm Drift	Facial droop (show teeth or smile) Abnormal = one side does not move as well as the other Horizontal Gaze (side to side)
Limbs	Motor-Arm Drift (close eyes and hold out both arms) Abnormal = one side does not move as well as the other Sensory – Arm and leg touch and pinch Coordination – finger to nose, heel to shin

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
Time	*Since symptoms started. There is the time constraint of 4 hours to get the patient to the hospital from time of onset of symptoms.*

PART II – PROCEDURES AND POLICIES

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

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.

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)

EMT's may administer up to 325 325mg of aspirin for chest pain suspected to be cardiac in nature. Chewable aspirin is the preferred method, using (4) 81mg tablets. A patient who has already taken 325mg aspirin for the incident need not receive more

INHALERS (MDIs)

Patients with chronic respiratory diseases such as asthma and COPD will often have prescriptions for bronchodilator, anticholinergic, and/or steroid inhalers. ONLY bronchodilators (albuterol, Xopenex, etc) will help in asthma/ respiratory emergencies.

The EMT may locate the inhaler and hand it to the patient. The patient should be able to self-administer the medication.

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

ADMINISTRATION OF MEDS (CONT.)

NITROGLYCERIN

The patient should not have taken sexually enhancing drugs within 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

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) unless normal for the patient.
- Chest pain or discomfort not directly related to musculoskeletal pain
- EMTs Index of Suspicion (IOS) that the patient is sick
- Significant Trauma/Mechanism of Injury (MOI)
- Multi-system trauma
- Fractures more than one location
- MVA—death in same vehicle
- 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 oropharyngeal airway (OPA) is always indicated for unconscious patients without gag reflex**

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.

Hyper-oxygenate the patient well before and after suctioning.

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.

A tourniquet may be used for control of severe, uncontrolled extremity not quickly controlled by other measures. 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

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 delivered by BVM w/ ResQ POD	2 breaths every 30 compressions (30:2 compression to ventilation ratio) Verify chest rise
Rescue breaths for CPR with ResQ POD on advanced airway (King -tube or ET tube)	8 to 10 breaths/minute (~1 breath every 10 compressions or every 6 to 8seconds; do not pause for compressions)
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)	
• **DEFIB:** AED Pediatric pads or adult pads if they can placed effectively	

PER WHATCOM COUNTY GUIDELINES:

Patients less than 20 kg (45lbs) without a pulse can benefit from the defibrillation after airway issues have been resolved. **It is preferred and the recommendation of AHA that defibrillation in patients less than 20kg, only the pediatric pads be used.** However, if pediatric pads are unavailable and the adult electrode pads will fit in either the traditional anterior (white to right, red to ribs) placement or in an anterior/posterior placement, there is no significant harm in applying the AED and it could potentially be life saving.

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 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

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.

Documentation is important. On the Incident Report Form, describe the patient's medical history, the presence of a DNR directive (if any), or verbal requests 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

ADULT ANAPHYLAXIS

Indication for drug administration:: Vital signs, work of breathing, lung sounds, skin signs, and ability to speak.

Adult Dose: - 0.30 mg of 1:1,000

- Scrub the skin vigorously with an alcohol wipe
- Allow to air dry (do not touch, blow on, or fan the injection site)
- Break open ampule , or, if using a vial, cleanse vile with alcohol wipe
- Insert the needle into the ampule or vial. Withdraw the appropriate volume of medication. Fill to 0.1 ml more than the desired dose
- Hold the needle upright. Push any air bubbles and extra medication out of the syringe
- Broadly hold the muscle. Do not pinch the skin. Use Deltoid muscle for adult dose. Lateral thigh can also be used.
- Hold the syringe like a dart, Insert the needle with a quick stab at a 90° angle to the skin surface
- Depress the plunger with a slow, steady motion until the syringe is empty and the needle automatically retracts. Discard in Sharps Container.
- Cover the puncture site with an adhesive bandage. Reassess your patient. Take vitals every 5 minutes.
- Prepare for transport by ALS.
- If patient's vitals and signs/symptoms have not improved within 10 minutes call med control or incoming medic unit for permission to give a second equivalent dose.

Pediatrics – 0.15 MG of 1:1,000 The Anterolateral thigh is the best site for **infants** &

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.

Use of OXYMETAZOLINE permitted in Whatcom County **(e.g. Afrin®)**
Assess vital signs

If patient is on warfarin (Coumadin) transport to the ER

If patient is hypotensive and/or tachycardic, consider ALS upgrade or rendezvous

GLUCOMETRY

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.

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.

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

Patients on oral hypoglycemic agents who are initially found to be hypoglycemic with blood glucose <80 probably require transport at the ER. Contact med control with information about the specific medication.

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

1. Patient is able to eat and drink normally.
2. Patient responds completely as evidence by BOTH:
3. Blood glucose reaches greater than **80 mg/dl**, AND the patient is conscious and alert with appropriate behavior.

It is preferred that a responsible person remain with the patient.
Patient should be advised to see their physician.

MULTI-CASUALTY INCIDENT

See the County's IMS Manual, Chapter 7

NEUROLOGICAL ASSESSMENT

Assessing Level of Consciousness:
Use the AVPU scale to determine your patient's level of consciousness. Always monitor for changes.

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

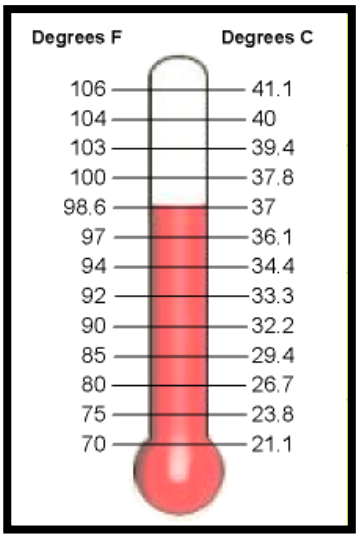
The **Glasgow Coma Scale** is a means of measuring and monitoring level of consciousness by calculating a score based on the best eye, verbal, and motor response. The lowest score possible is 3, the highest is 15. All patients that you write a report for should have their Glasgow Coma Scale number documented on the report.

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

NORMAL VITAL SIGNS BY AGE

Age	Respirations (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

Temperature Conversion Chart: Degrees Fahrenheit to Celsius



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, 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 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: 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. Allow the parent or guardian to hold the infant or child to decrease stress.

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 two positions to consider:

Recovery

Semi-reclining

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).

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).

Figure 2

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

Patient Positioning (cont.)

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.

Figure 4

PATIENT RESTRAINT

Occasionally, a patient exhibits behavior that is dangerous to the patient, the public or to the responders. For the safety of the patient, we may need to use a device to restrain them. When doing so, it is important that the reason we are using restraints is to protect our patient and ourselves. When the patient is restrained, we must be extra careful to monitor the patient who now is unable to self protect his or her airway. Once restraints have been applied, they should not be taken off until the patient is at the ER. There are two factors that determine whether or not a devise is considered a restraint. If the reason for using the restraint is to prevent movement and done without the consent of the patient, then it is considered a restraint.

PROCESS OF RESTRAINT

REMEMBER: Safety and the prevention of injuries are the major concerns in the process of restraint application. Always try to maximize the patient's self control BEFORE deciding to apply the restraints.

Self-control - 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.

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. Sometimes using a statement like "*Can we apply these soft safety bracelets so that you and our people will be safer?*" *Soft safety bracelet* sounds much nicer than "restraints". Giving them a choice may help give them a feeling of control and thus encourage them to cooperate. .

Be ready and able to overpower patient. Never attempt physical restraint without the resources needed to safely overpower a patient. (**ONE RESPONDER PER LIMB AND HEAD**)

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.
It may be helpful to have the police present during restraint but do not delay necessary action. EMTs should be aware of their own personal safety. A patient may become violent.

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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 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

Hand washing is the most effective way to prevent transmission of infectious disease!

Wash Hands and/or Gel

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

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

FULL PPE *for possible infectious contacts*

Donning Sequence (MEGG)
Mask (fit tested) > **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

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 about injuries
- 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 be reported to Child Protective Services or Adult Protective Services
Do not leave patients in dangerous or potentially dangerous circumstances.
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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.

Begin by placing patient in a sitting position. Legs must dangle or with feet flat on floor (**caution:** lay down patient promptly if he/she becomes dizzy or lightheaded).

After patient stands for one to two minute(s) obtain blood pressure and heart rate.

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

If sitting is tolerated by patient, then you can progress to the next step. Stand patient upright slowly (**caution:** lay down patient promptly if he /she becomes dizzy or lightheaded).

After patient stands for one to two minute(s) obtain blood pressure and heart rate.

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

Positive findings

Increase in pulse of 20/minute or more 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

PULSE OXIMETRY

Pulse oximetry is an approved protocol and is an expected assessment tool when assessing vital signs. It is not, however, to be used in place of a physical assessment of the patient's pulse or overall appearance

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

- There is no contraindication for using pulse oximetry.

Use and Administration

Place the probe on a clean digit. This should be accomplished immediately upon patient contact or simultaneously with the initial administration of oxygen allowing for a "room air" estimate. Record the initial reading along with respiratory rate for baseline vitals.

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

NOTE

Pulse oximetry is inaccurate in the following clinical situations:

- Cardiac arrest
- Shock/ relative hypovolemia
    - Hypothermia– or cold extremities with or without core temperature changes
- 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
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.

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

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 Whatcom 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 will help you in determining SICK/NOT SICK and may alone determine into which category the patient is placed.

Adult SICK/NOT SICK Clinical Indicators:

- Chief complaint and MOI/NOI/IOS
- Respirations - work of breathing and respiratory rate
- Pulse – too fast or too slow
- 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 MOI, mental status, skin signs and respirations.

SICK/NOT SICK (CONT.)

The pediatric SICK/NOT SICK approach uses three key indicators of physiologic status collectively called the “pediatric assessment triangle.” The triangle allows the EMS provider to make rapid and accurate decisions on the status of a pediatric patient based on readily apparent signs.

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 onto a rubber mat. He is conscious and crying, without respiratory distress. His skin signs are pink, warm and dry.* 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: warm and dry, normal color

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

SPINAL ASSESSMENT

EMT/FR Skill

To use this Spinal assessment protocol Whatcom County EMT's and FR need to have been trained in the complete use of field spinal assessment. Once the patient condition indicates movement to the (red) immobilize side spinal assessment protocol stops and neurological status checks before and after spine boarding are done.

I. Mechanism of Injury

A. Negative mechanism of injury indicates forces transferred to the body (mechanism) that could not possibly damage the spinal column, such as an isolated hand laceration.

B. Uncertain mechanism of injury relates to mechanisms that could cause an injury to the spinal column but that the likelihood is questionable, such as a fall at ground level in a healthy patient, falls from low heights, and low to medium speed MVA's.

C. Positive mechanism of injuries relates to very likely causes of spinal injury such as, high speed MVA's, falls from twenty (20) feet or more, ejection from MVA.

Note: penetrating trauma to the torso without obvious neurologic impairment is considered negative mechanism.

If mechanism is "uncertain" move to patient reliability.

II. Patient Reliability

A. This is the area of the spinal assessment protocol that requires the most careful observation and judgment. The questions to ask yourself are,

1. Is this patient calm, alert, cooperative, sober?
2. Can I communicate with the patient?

Some common causes for patients to be unreliable are,

1. Unconsciousness
2. Altered LOC with or without intoxication.
3. Acute stress reaction.
4. Distracting injuries.
5. Language barrier.

Remember many patients will be unreliable initially, then with calming and reassurance over time they may become reliable.

If patient passes reliability issues, move to palpation assessment.

Spinal Assessment (cont.)

III. Spine Pain or Tenderness

A. This section refers to the palpation of the spinal column (this does not include lateral muscular pain), with pain referring to constant pain, and tenderness referring to pain elicited with palpation. The exam needs to be fingers on skin (or light clothing), not mittens on coats.
If no spine pain or tenderness move on to motor sensory exam.

IV. Motor Sensory Exam

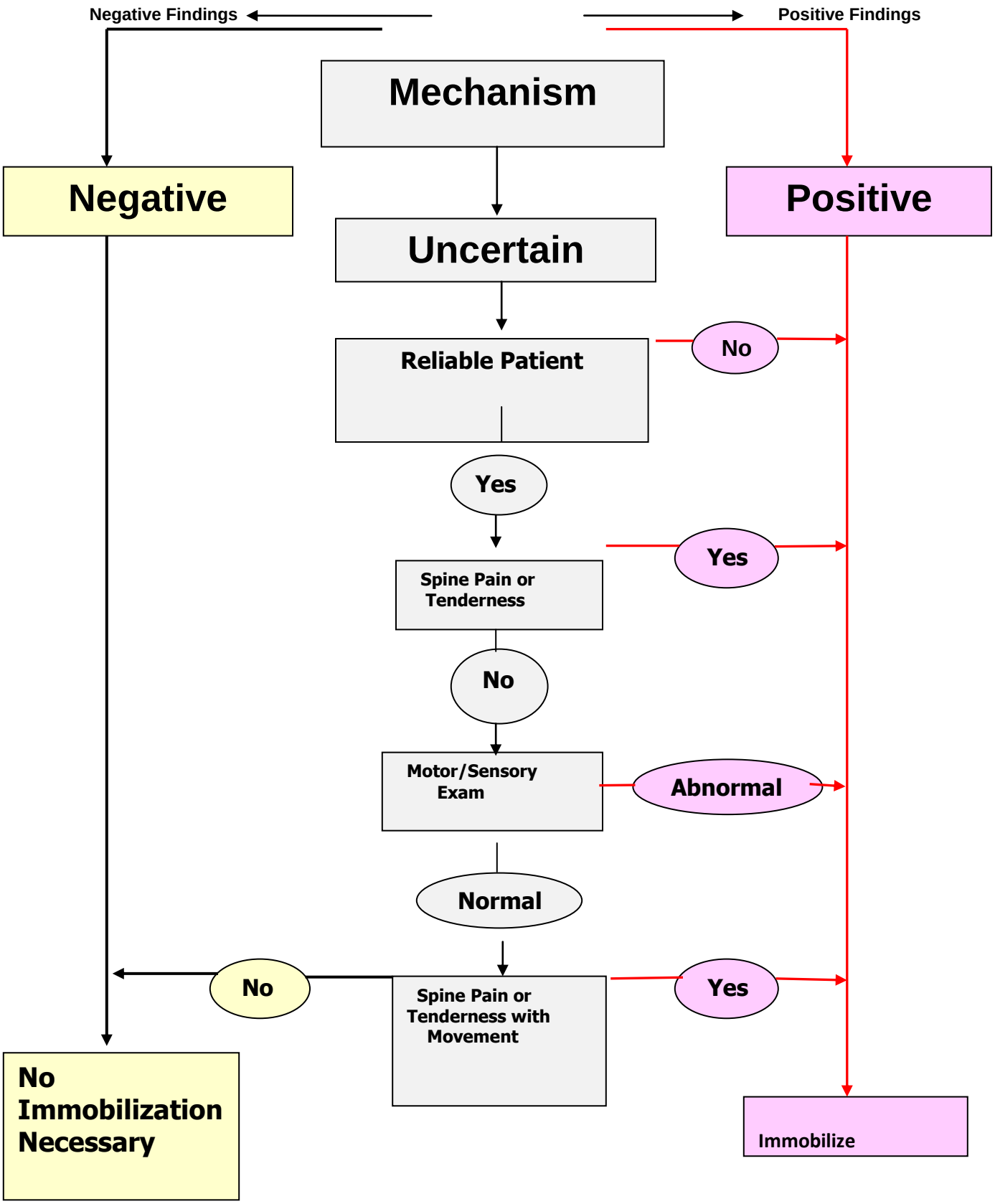
A. The motor sensory exam must show bilaterally equal (and normal) motor and sensory nerve function. Remember the three classic patterns of cord damage and check multiple areas of each extremity for both light touch and sharp sensation. (The three classic patterns of cord damage are decreased sensation, no sensation, hypersensitivity)

If motor sensory exam is normal move on to spine function tests.

V. Spine Pain with Movement

A. If all questions and tests to this point indicate a reliable patient with no spine fracture or spinal cord damage, then the final tests are to have the patient move the spine through a full range of motion. If that does not cause pain repeat the same movements against resistance. The patient must be told to stop any movement at the first sign of pain. If the movement does not elicit any spine pain, the patient does not require spinal immobilization.

Spinal Care Algorithm



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.

Place patient on a long backboard, full-body vacuum mattress or clamshell board and immobilize chest by using a proper strapping device and either crisscrossing or by strapping straight across.

Assess ventilation after tightening straps to ensure that respiratory effort is not impaired.

Immobilize the pelvis by using a proper strapping device and either crisscrossing or by strapping straight across. Use caution with pelvic or abdominal injuries.

Put one strap across the calves just below the knees.

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.

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.

SPLINTING (CONT.)

Pelvic Fractures

Immobilization of these fractures should be accomplished by use of a pelvic sling

Unrestrained movement of fractured pelvic bones following significant trauma can cause internal hemorrhage of 2-3 liters of blood, and death. Similar to c-spine injuries, pelvic fractures require **stabilization before transport**. Any motion between the torso and legs can cause severe shifting of the fractured pelvis, potentially dislodging any clotting already in place.

MAST pants can stabilize a broken pelvis, but over or under inflation of MAST will compromise their effectiveness. There is no way to know when the pressure is right for pelvic stabilization.

The Pelvic Sling was designed to apply the ideal amount of force to bring the pelvic ring back into alignment. Like the MAST, the Pelvic Sling uses circumferential pressure to squeeze the pelvis uniformly. The Sling's major advantage is that its buckle has a definite stop with a positive click at exactly the optimal calculated pressure.

Like a C-collar, the Pelvic Sling should be applied to *any* patient with high speed or other significant trauma suspicious for pelvic injury. **Mechanism of injury alone may indicate use of the Sling.**

I. Indications for Use

A**.** Patients with a history of high energy, multi-system trauma i.e.: motor vehicle accidents, pedestrian accidents, crush injuries, falls.

II. Contraindications for Use

Patients under 80 pounds

III. Procedure

- Review use instructions on the package.
- Clothing should be removed before placing the Sling. *(It is designed to stay in place until the patient goes to surgery).*
- Three sizes are available to fit patients
  - Large>200 pounds
  - Standard 110 – 200 pounds
  - Small <120 pounds

The standard size can be field modified to fit smaller patients, just cut off the plastic slide pad and use the Velcro underneath.

SPLINTING (CONT.)

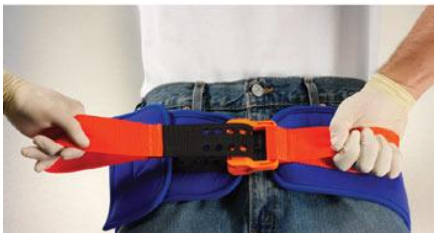
Cautions

- **The Sling wraps the hips and buttocks, not the waist. Be sure you place the <u>top</u> of the sling no higher than the anterior superior spine of the femur. Try to make sure the buckle is centered over the alignment of the pubic symphasis.**

- The Sling is a single-use, disposable item.

IV. Removal

- Once the Sling is in place don't remove it.



TRACTION SPLINTING

Although other traction devices are used, Whatcom County's preferred traction device is the Kendrick Traction Device.

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

Two EMTs are needed to apply a traction splint.

Remove or cut away clothing.

Dress and bandage significant wounds using a sterile dressing.

Manually immobilize the injured extremity prior to dressing/bandaging.

Do not apply manual traction. Check distal CMS before and after manipulation.

Determine SICK/NOTSICK
Control Bleeding

- Size splint to uninjured leg
- Have one EMT stabilize the leg while the other applies the traction device.
- Apply splint
    1. Groin strap
    2. Ankle hitch
    3. Knee strap
    4. Extend
    5. Thigh and calf straps

- 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.

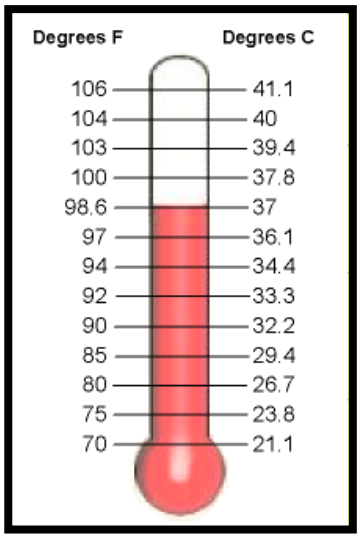
Police personnel will usually remove darts unless embedded in critical areas as above. Any darts in critical areas should be removed at the ER. Transport the patient ALS or BLS depending on patient condition.

TEETH

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

TEMPERATURE CONVERSIONS

Temperature Conversion Chart: Degrees Fahrenheit to Celsius



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). Consider beginning transport and choosing rendezvous point to meet ALS en route.

  BLS Transport

  Stable patients who require medical attention or oxygen during transport may be transported with an EMT staffed ambulance

When requesting an ALS Unit for a BLS transport, the default mode in Whatcom County for ambulance travel to the scene is non-emergency response. Advise units en route if rapid response is needed.

- 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)
  5. The EMT considers a taxi to be an appropriate and safe method of transportation for the particular clinical problem.
  6. Patient should be masked if there are respiratory symptoms.

TRANSPORT AND DESTINATION (CONT.)

Destination Options

In deciding what is best for the patient you have **three 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 and Medical Control must be notified
- Urgent Care Clinic may be considered at patient's request and with department approval.
- Stable 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
     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 if also responding to the scene or with medical control. The EMT must notify the destination facility of the clinical problem and the facility must agree to accept the patient.