

KENTUCKY RIVER MINE RESCUE CONTEST



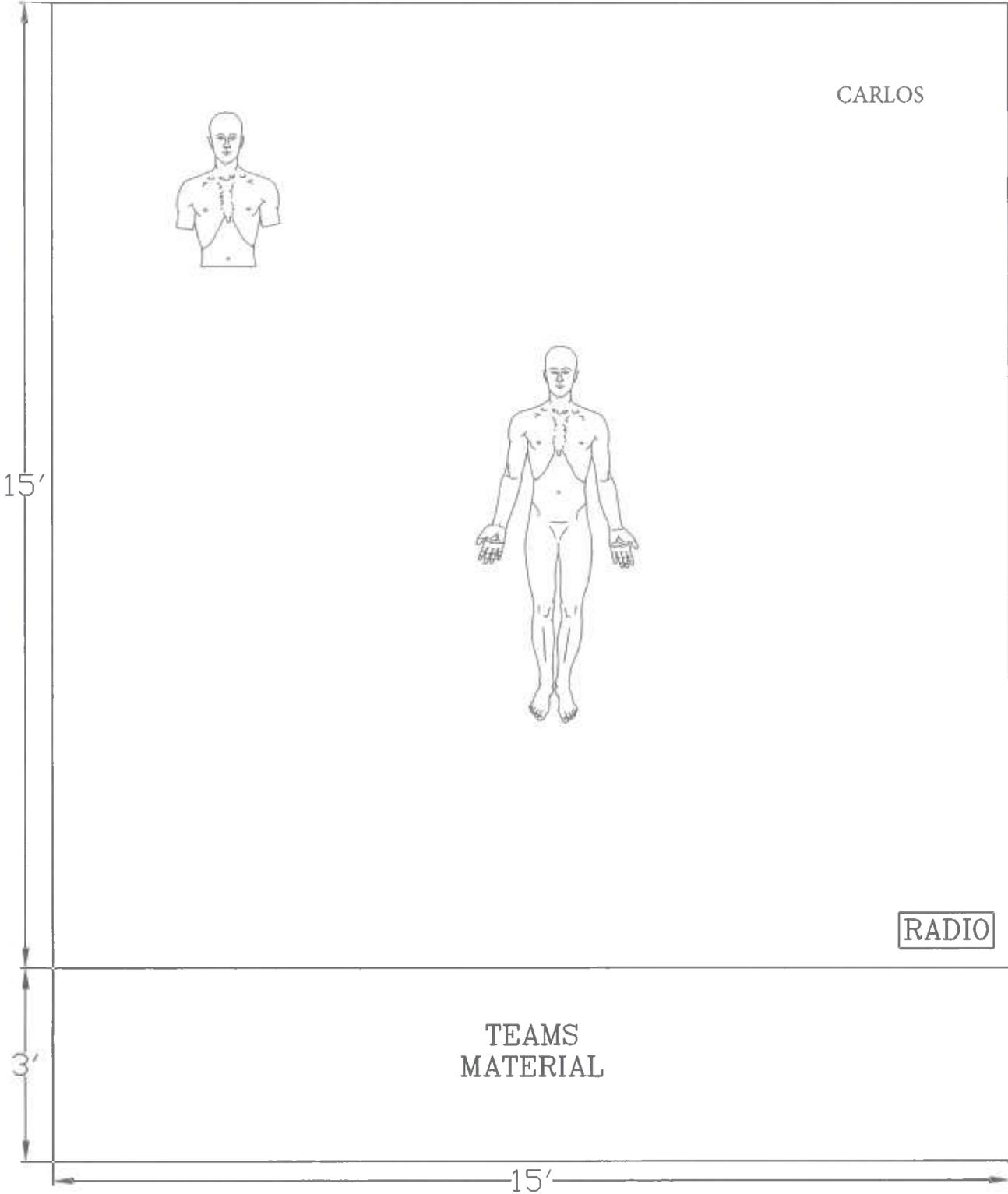
FIRST AID PROBLEM

2017

PROBLEM

Jose is a member of a contractor crew that is remodeling a large preparation plant. It is 2:00 PM on an extremely hot July day. Jose is working from an elevated position fifteen feet above the loading dock when he suddenly falls to the concrete surface below. When you and your partner reach Jose he is unresponsive and his skin is hot, red and dry to the touch. Carlos tells you he was complaining of being dizzy just before he fell. Please treat Jose and prepare him for transport.

FIELD LAYOUT



LIST OF INJURIES

JOSE

RESPIRATIONS: 28

PULSE: 132

PERFUSION: < 2 SECONDS

SEVERE HYPERTHERMIA

**2 INCH LACERATION ON BACK OF HEAD WITH
SKULL FRACTURE**

DISLOCATED RIGHT SHOULDER

FRACTURED RIGHT WRIST

FRACTURED RIGHT KNEE

JOSE

**PUPILS UNEQUAL
AND NON-REACTIVE**

**BLOOD AND CLEAR
FLUID DRAINING FROM
LEFT EAR**

**DISLOCATED RIGHT
SHOULDER**

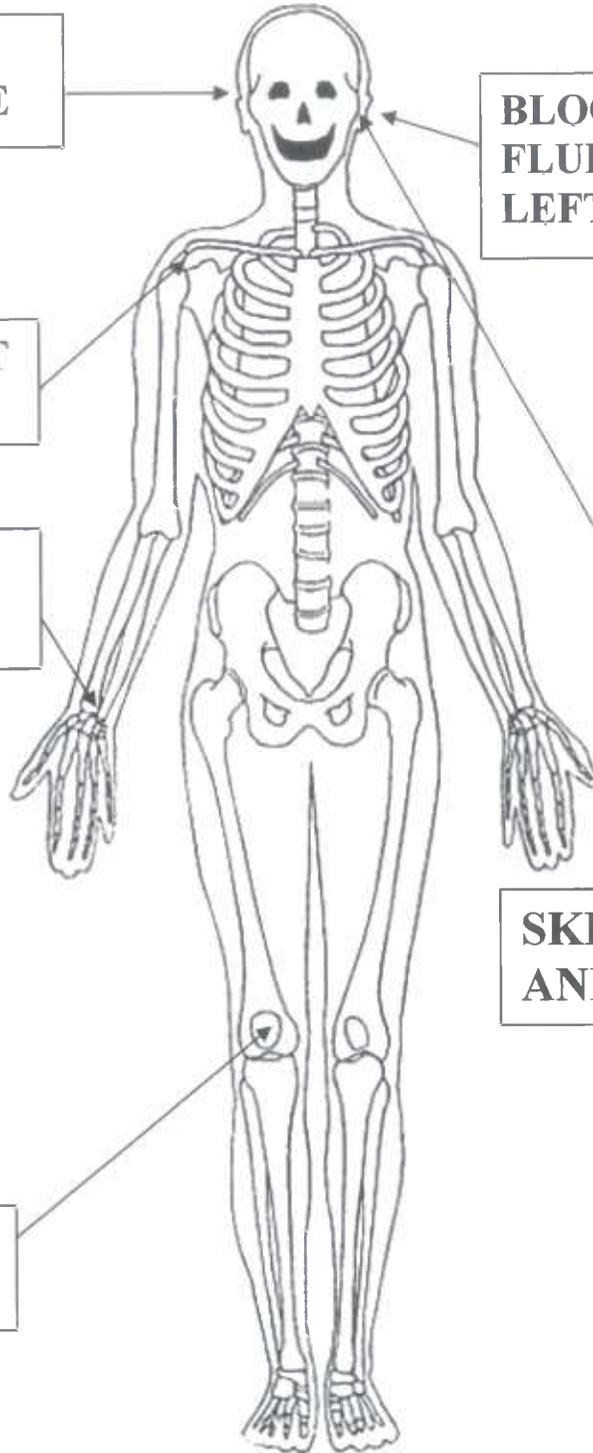
**2 INCH
LACERATION ON
BACK OF HEAD
WITH SKULL
FRACTURE**

**FRACTURED
RIGHT WRIST**

**SKIN IS HOT, RED
AND DRY**

**FRACTURED RIGHT
KNEE**

**RESPIRATIONS: 28
PULSE: 132
PERFUSION: < 2 SECONDS
MENTAL STATUS: UNABLE TO
FOLLOW COMMANDS**



INITIAL ASSESSMENT

PROCEDURES	CRITICAL SKILL
1. SCENE SIZE UP	<input type="checkbox"/> *A. Observe area to ensure safety <input type="checkbox"/> *B. Call for help
2. MECHANISM OF INJURY	<input type="checkbox"/> *A. Determine causes of injury, if possible <input type="checkbox"/> *B. Triage: Immediate, Delayed, Minor or Deceased. <input type="checkbox"/> *C. Ask patient (if conscious) what happened
3. INITIAL ASSESSMENT	<input type="checkbox"/> *A. Verbalize general impression of the patient(s) <input type="checkbox"/> *B. Determine responsiveness/level of consciousness (AVPU) Alert, Verbal, Painful, Unresponsive <input type="checkbox"/> *C. Determine chief complaint/apparent life threat
4. ASSESS AIRWAY AND BREATHING	<input type="checkbox"/> A. Correctly execute head-tilt/chin-lift or jaw thrust maneuver, depending on the presence of cervical spine (neck) injuries <input type="checkbox"/> B. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds) <input type="checkbox"/> C. If present, treat sucking chest wound
5. ASSESS FOR CIRCULATION	<input type="checkbox"/> A. Check for presence of a carotid pulse (5-10 seconds) <input type="checkbox"/> B. If present, control life threatening bleeding <input type="checkbox"/> C. Start treatment for all other life threatening injuries/conditions (reference Rule 2).

IMMEDIATE: Rapid Patient Assessment treating all life threats Load and Go. If the treatment interrupts the rapid trauma assessment, the **assessment** will be completed at the end of the **treatment**.

Jose is an immediate patient!

Team will have to perform Rapid Assessment.

PATIENT ASSESSMENT

PROCEDURES

CRITICAL SKILL

1. HEAD	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>*A. Check head for DOTS: Deformities, Open wounds, Tenderness and Swelling</p> <p>*B. Check and touch the scalp</p> <p>*C. Check the face</p> <p>*D. Check the ears for bleeding or clear fluids</p> <p>*E. Check the eyes for any discoloration, unequal pupils, reaction to light, foreign objects and bleeding</p> <p>*F. Check the nose for any bleeding or drainage</p> <p>*G. Check the mouth for loose or broken teeth, foreign objects, swelling or injury of tongue, unusual breath odor and discoloration</p>
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2 Inch Laceration on back of head with Skull Fracture.

DRESSINGS AND BANDAGING - OPEN WOUNDS

PROCEDURES

CRITICAL SKILL

1. EMERGENCY CARE FOR AN OPEN WOUND	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>*A. Control bleeding (Bleeding is Controlled)</p> <p>*B. Prevent further contamination</p> <p>*C. Bandage dressing in place after bleeding has been controlled</p> <p>*D. Keep patient lying still</p>
2. APPLY DRESSING	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>A. Use sterile dressing</p> <p>B. Cover entire wound</p> <p>C. Control bleeding</p> <p>D. Do not remove dressing</p>
3. APPLY BANDAGE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>A. Do not bandage too tightly.</p> <p>B. Do not bandage too loosely.</p> <p>C. Do not leave loose ends.</p> <p>D. Cover all edges of dressing.</p> <p>E. Do not cover tips of fingers and toes, unless they are injured.</p> <p>F. Bandage from the bottom of the limb to the top (distal to proximal) if applicable.</p>

Multiple wounds will be treated as per procedures listed in patient assessment.

Skull Fractures and Brain Injuries

- *1. Open airway with jaw thrust
- 2. Apply collar
- *3. Use loose gauze dressing- no direct pressure
- *4. Keep at rest, ask them questions
 - A. Don't elevate legs (on or off a backboard)
 - B. After entire body is immobilized- tilt back board, injured side down

2. NECK	<input type="checkbox"/> <input type="checkbox"/>	*A. Check the neck for DOTS *B. Inspect for medical ID
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Team may have applied C Collar after treatment of Skull Fracture but rules state that C Collar will not be applied until after examination of the neck! **Rule 7**

IMMOBILIZATION OF CERVICAL SPINE

PROCEDURES	CRITICAL SKILL
1. ESTABLISH AND MAINTAIN IN-LINE IMMOBILIZATION	<input type="checkbox"/> A. Place head in a neutral, in-line position unless patient complains of pain or the head is not easily moved into position <input type="checkbox"/> B. Place head in alignment with spine <input type="checkbox"/> C. Maintain constant manual in-line immobilization until the patient is properly secured to a backboard with head immobilized
2. ASSESS CSM	<input type="checkbox"/> *A. Assess distal circulation, sensation, and motor function (on all extremities)
3. ASSESS CERVICAL REGION AND NECK	<input type="checkbox"/> *A. Inspect and palpate for injuries or signs of injuries using: DOTS acronym <input type="checkbox"/> B. Remove clothing or jewelry as necessary
4. BANDAGE ANY WOUND	<input type="checkbox"/> A. Any neck wounds
5. APPLY CERVICAL SPINE IMMOBILIZATION	<input type="checkbox"/> A. Apply properly sized collar or manual immobilization <input type="checkbox"/> <u>One piece C-collar</u> <input type="checkbox"/> A. Select proper sized collar <input type="checkbox"/> B. Apply collar <input type="checkbox"/> C. Ensure that patient's head is not twisted during application <input type="checkbox"/> D. Ensure airway is open after placement <input type="checkbox"/> <u>Two piece C-collar</u> <input type="checkbox"/> A. Select proper sized collar <input type="checkbox"/> B. Apply rear section to back of neck <input type="checkbox"/> C. Center rigid support on spine <input type="checkbox"/> D. Apply front section (overlaps rear section) <input type="checkbox"/> E. Ensure chin rests in chin cavity <input type="checkbox"/> F. Secure collar with Velcro straps <input type="checkbox"/> G. Ensure airway is open after placement
6. SECURE HEAD TO APPROPRIATE IMMOBILIZATION DEVICE	<input type="checkbox"/> A. Immobilize patient to appropriate immobilization device <input type="checkbox"/> B. Use head set or place rolled blankets or towels on each side of head <input type="checkbox"/> C. Tape and or strap head securely to appropriate immobilization device
7. REASSESS	<input type="checkbox"/> *A. Reassess distal circulation, sensation, and motor function <input type="checkbox"/> *B. Assess patient response and level of comfort

Resume Rapid Patient Assessment!

3. CHEST	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> *A. Check chest area for DOTS *B. Feel chest for equal breathing movement on both sides *C. Feel chest for inward movement in the rib areas during inhalations 												
4. ABDOMEN	<input type="checkbox"/>		*A. Check abdomen (stomach) for DOTS												
5. PELVIS	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> *A. Check pelvis for DOTS *B. Inspect pelvis for injury by touch (Visually inspect and verbally state inspection of crotch and buttocks areas) 												
6. LEGS	<table border="0"> <tr> <td style="text-align: center;">L</td> <td style="text-align: center;">R</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	L	R	<input type="checkbox"/>		<ul style="list-style-type: none"> *A. Check each leg for DOTS B. Inspect legs for injury by touch C. Unresponsive: Check legs for paralysis (pinch inner side of leg on calf) *D. Responsive: Check legs for motion; places hand on bottom of each foot and states "Can you push against my hand?" *E. Check for medical ID bracelet 									
L	R														
<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/>	<input type="checkbox"/>														

Envelope #1

Jose has stopped breathing and does not have a pulse!

TWO-RESCUER CPR WITH AED (WITH SPINAL INJURY - MANIKIN ONLY)

PROCEDURES

CRITICAL SKILL

<p>1. RESCUER 1 - ESTABLISH UNRESPONSIVENESS</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>A. Tap or gently shake shoulders *B. "Are you OK?" C. Determine unconsciousness without compromising cervical spine (neck) injury *D. "Call for help" *E. "Get AED" (Note: If AED is used, follow local protocol)</p>
<p>2. RESCUER 1 - MONITOR PATIENT FOR BREATHING</p>	<input type="checkbox"/>	<p>A. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds)</p>
<p>3. RESCUER 1 - CHECK FOR CAROTID PULSE</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>A. Correctly locate the carotid pulse - on the side of the rescuer, locate the patient's windpipe with your index and middle fingers and slide your fingers in the groove between the windpipe and the muscle in the neck B. Check for presence of carotid pulse for 5 to 10 second *C. Absence of pulse *D. Immediately start CPR if no pulse</p>
<p>4. RESCUER 1 - POSITION FOR COMPRESSIONS</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>A. Locate the compression point on the breastbone between the nipples B. Place the heel of one hand on sternum the compression point and the other hand on top of the first so hands are parallel C. Do not rest fingers on the chest Keep heel of your hand on chest during and between compressions</p>
<p>5. RESCUER 1 - DELIVER CARDIAC COMPRESSION</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>A. Give 30 compressions B. Compressions are at the rate of 100 to 120 per minute (30 compressions delivered within 18 seconds) C. Down stroke for compression must be on or through compression line D. Return to baseline on upstroke of compression</p>
<p>6. RESCUER 2 - ESTABLISH AIRWAY</p>	<input type="checkbox"/> <input type="checkbox"/>	<p>A. Kneel at the patient's head B. Correctly execute jaw thrust maneuver</p>

<p>7. RESCUER 2 - VENTILATIONS BETWEEN COMPRESSIONS</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>A. Rescuer 1 should place the barrier device (pocket mask/Shield with one way valve) on manikin (OPTION 1: When spinal injury is present, Rescuer No. 2 can hold barrier device on manikin after Rescuer No. 1 correctly places device over the mouth and nose (OPTION 2: Rescuer 1 can place the device on the manikin each time patient is ventilated)</p> <p>B. Rescuer 2 Gives 2 breaths 1 second each</p> <p>C. Each breath - minimum of .8 (through .7 liter line on new manikins)</p> <p>D. Complete breaths and return to compressions in less than 10 seconds (This will be measured from the end of last down stroke to the start of the first down stroke of the next cycle.)</p>
<p>8. CONTINUE CPR FOR TIME STATED IN PROBLEM</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>A. Provide 5 cycles of 30 chest compressions and 2 rescue breaths</p> <p>B. To check pulse, stop chest compressions for no more than 10 seconds after the first set of CPR</p> <p>C. Rescuer at patient's head maintains airway and checks for adequate breathing or coughing</p> <p>D. The rescuer giving compressions shall feel for a carotid pulse</p> <p>E. If no signs of circulation are detected, continue chest compressions and breaths and check for signs of circulation after each set</p> <p>F. A maximum of 10 seconds will be allowed to complete ventilations and required pulse checks between sets (this will be measured from the end of the last down stroke to the start of the first down stroke of the next cycle)</p>
<p>9. SECOND RESCUER ARRIVES WITH AED (DURING FIFTH SET OF COMPRESSIONS)</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>A. First rescuer continues compressions while second rescuer turns on AED and applies pads.</p> <p>B. RESCUERS SWITCH-First rescuer clears victim, allowing AED to analyze. (Judges shall provide an envelope indicating a <u>shockable</u> or non-shockable rhythm) <u>"Envelope #2"</u> (<u>Envelope #4 during 2nd set.</u>)</p> <p>C. If AED indicates a shockable rhythm, first rescuer clears victim again and delivers shock.</p>
<p>10. RESUME HIGH-QUALITY CPR</p>	<input type="checkbox"/> <input type="checkbox"/>	<p>A. Second rescuer gives 30 compressions immediately after shock delivery (2 cycles).</p> <p>B. First rescuer successfully delivers 2 breaths.</p>

Envelope #2

AED states "**SHOCK ADVISED**"

This envelope is given during step 9 of skill sheet.

11. CHANGING RESCUERS	<input type="checkbox"/>	A. Change of rescuers shall be made in 5 seconds or less and will be completed as outlined in problem. Team must switch every 5 cycles in less than 5 seconds.
12. CHECK FOR RETURN OF PULSE	<input type="checkbox"/> <input type="checkbox"/>	A. A final pulse check will be required at the end of the last set of CPR (within 10 seconds) *B. "Patient has a pulse."

Envelope #3

Perform 1 set of 2 person CPR and allow the AED to reanalyze patient!

This envelope is given at step 11 of skill sheet.

Envelope #4

AED states "**NO SHOCK ADVISED, CONTINUE CPR**"

This envelope is giving during the 2nd set of CPR

Envelope #5

After 2 minutes of 2 person CPR Jose has a pulse and is breathing!

This envelope is given when team starts 3rd set of CPR

Team should resume rapid assessment.

7. ARMS	L <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	R <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	*A. Check each arm for DOTS *B. Inspect arms for injury by touch *C. Unresponsive: Check arms for paralysis (pinch inner side of wrist) *D. Responsive: Check arms for motion (in a conscious patient; team places fingers in each hand of patient and states "Can you squeeze my fingers?") *E. Check for medical ID bracelet
8. BACK SURFACES	<input type="checkbox"/>		*A. Check back for DOTS

Team should prepare Jose for Transport!

IMMOBILIZATION - LONG SPINE BOARD (Backboard)

PROCEDURES		CRITICAL SKILL
1. MOVE THE PATIENT ONTO THE LONG SPINE BOARD	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. One First Aid Provider at the head must maintain in-line immobilization of the head and spine B. First Aid Provider at the head directs the movement of the patient C. Other First Aid Provider control movement of the rest of body D. Other First Aid Provider position themselves on same side E. Upon command of First Aid Provider at the head, roll patient onto side toward First Aid Providers F. Quickly assess posterior body, if not already done G. Place long spine board next to the patient with top of board beyond top of head H. Place patient onto the board at command of the First Aid Provider at head while holding in-line immobilization using methods to limit spinal movement I. Slide patient into proper position using smooth coordinated moves keeping spine in alignment
2. PAD VOIDS BETWEEN PATIENT AND LONG SPINE BOARD	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Select and use appropriate padding B. Place padding as needed under the head C. Place padding as needed under torso
3. IMMOBILIZE BODY TO THE LONG SPINE BOARD	<input type="checkbox"/>	A. Strap and secure body to board ensuring spinal immobilization, beginning at shoulder and working toward feet
4. IMMOBILIZE HEAD TO THE LONG SPINE BOARD	<input type="checkbox"/> <input type="checkbox"/>	A. Using head set or place rolled towels on each side of head B. Tape and/or strap head securely to board, ensuring cervical spine immobilization
5. REASSESS	<input type="checkbox"/> <input type="checkbox"/>	*A. Reassess distal circulation, sensation, and motor function *B. Assess patient response and level of comfort

SHOCK

PROCEDURES

CRITICAL SKILL

1. CHECK FOR SIGNS AND SYMPTOMS OF SHOCK	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	*A. Check for pale (or bluish) skin (in victim with dark skin examine inside of mouth and nailbeds for bluish coloration. *B. Check for cool, clammy skin *C. Check for weakness
2. TREATMENT	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Keep victim lying down B. Cover with blanket to prevent loss of body heat and place a blanket under the patient. (Do not try to place blanket under patient with possible spinal injuries) C. Elevate according to injury *D. Reassure and calm the patient

Option 2: Lay the patient flat, face up. This is the supine position, used for patients with a spinal injury and patients who have serious injuries to the extremities that have not been supported. If the patient is placed in this position, you must constantly be prepared for vomiting.

Envelope #6

No Ambulances are available so transportation is delayed!

Team should treat all injuries

Fractured Right Knee

SPLINTING (RIGID OR SOFT) PELVIC GIRDLE, THIGH, KNEE, AND LOWER LEG

PROCEDURE		CRITICAL SKILL
1. DETERMINE NEED FOR SPLINTING	<input type="checkbox"/> <input type="checkbox"/>	*A. Assess for: E. Pain F. Swelling G. Deformity B. Determine if splinting is warranted
2. APPLY MANUAL STABILIZATION	<input type="checkbox"/>	A. Support affected limb and limit movement B. Do not attempt to reduce dislocations
3. SELECT APPROPRIATE SPLINT	<input type="checkbox"/> <input type="checkbox"/>	A. Select appropriate splinting method depending on position of extremity and materials available B. Select appropriate padding material
4. PREPARE FOR SPLINTING	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Remove or cut away clothing as needed *B. Assess distal circulation, sensation, and motor function C. Cover any open wounds with sterile dressing and bandage D. Measure splint E. Pad around splint for patient comfort

SPLINTING (RIGID) UPPER EXTREMITY FRACTURES AND DISLOCATIONS

PROCEDURES

CRITICAL SKILL

1. CARE FOR FRACTURE	<input type="checkbox"/>	*A. Check for distal circulation, sensation, and motor function H. Do not attempt to reduce dislocations (if applies)
2. IMMOBILIZING FRACTURE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Selection of appropriate rigid splint of proper length B. Support affected limb and limit movement C. Apply appropriate padded rigid splint against injured extremity D. Place appropriate roller bandage in hand to ensure the position of function E. Secure splint to patient with roller bandage, handkerchiefs, cravats, or cloth strips F. Apply wrap distal to proximal *G. Reassess distal circulation, sensation, and motor function
3. SECURING WITH SLING	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Place sling over chest and under arm B. Hold or stabilize arm C. Triangle should extend behind elbow on injured side D. Pull sling around neck and tie on uninjured side E. Pad at the neck (except when C-Collar is present) F. Secure excess material at elbow G. Fingertips should be exposed *H. Reassess distal circulation, sensation, and motor function
4. SECURING SLING WITH SWATHE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Use triangle cravat or factory swathe B. Swathe is tied around chest and injured arm *C. Reassess distal circulation, sensation, and motor function

SHOULDER BLADE

Support and limit movement of affected area Follow Procedures No. 1, No. 3 and No. 4 above

NOTE: Do not reposition dislocations

Both injuries can be treated at same time but bystander will have to be used to hold support of one of the injuries while team member takes support of the other!

Severe Hypothermia

SEVERE HYPERTHERMIA

PROCEDURES		CRITICAL SKILL
1. ASSESS FOR HYPERTHERMIA	<input type="checkbox"/>	*A. Patient exhibits signs and symptoms of hyperthermia: I. Redness J. Muscular cramps K. Weakness or exhaustion L. Rapid heart rate M. Dizziness or faintness N. Altered mental status to unresponsive
2. PREVIOUS INTERVENTIONS	<input type="checkbox"/>	*A. Inquire about previous interventions attempted
3. ASSESS FOR SEVERE HYPERTHERMIA (HEAT STROKE)	<input type="checkbox"/>	*A. Check skin for: B. Hot temperature C. Red D. Dry or moist
4. TREATMENT FOR SEVERE HYPERTHERMIA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	*A. Place patient in a cool environment *B. Wet patient skin by applying water from sponge or wet towels and fan C. Put in supine position with legs elevated *D. Offer drinking water if patient is responsive and not nauseated *E. Apply cool packs to neck, groin and armpits *F. Transport immediately
5. REASSESS	<input type="checkbox"/>	*A. Reassess level of consciousness (AVPU), respiratory status and patient response

Team may have treated this first as it is technically a life threatening condition but do not discount if they do it last!

Envelope #7

The Ambulance has arrived on scene and assumed all patient care.

Team should clean the field and stop the clock.