

# KENTUCKY RIVER MINE RESCUE CONTEST



**FIRST AID PROBLEM**

**2016**

**YOU AND YOUR PARTNER ARE LOCATED AT THE FRESH AIR BASE OF THE GO BIG BLUE MINE WHERE AN EXPLOSION HAS OCCURRED. THE EXPLORATION TEAM HAS JUST DROPPED OFF A PATIENT THAT THEY DISCOVERED. THEY INFORM YOU THAT HE WAS FOUND FACE DOWN, WEARING AN SCSR AND BLEEDING PROFUSELY FROM THE LEFT THIGH. THEY BANDAGED THE BLEEDING AND PACKED HIM TO YOUR LOCATION. THE COMMAND CENTER HAS BEEN NOTIFIED AND INFORMS YOU THAT TRANSPORTATION IS DELAYED BUT THEY WILL GET SOMETHING TO YOU AS SOON AS POSSIBLE. YOU HAVE ACCESS TO A FULLY STOCKED FIRST AID KIT EXCEPT FOR AN AED DUE TO THE RISK OF AN EXPLOSIVE MIXTURE OF MINE GASES. EVERYONE RETURNED TO WHERE THIS PATIENT WAS FOUND TO LOOK FOR OTHERS LEAVING YOU AND YOUR PARTNER ALONE. PLEASE HELP THIS PATIENT AND PREPARE HIM TO BE TRANSPORTED TO THE SURFACE!**

# **LIST OF INJURIES**

**BLACK EYE RIGHT SIDE**

**IMPALED OBJECT LEFT EYE**

**1 INCH ABRASION LEFT CHEEK**

**2 INCH ABRASION RIGHT PALM**

**2 INCH LACERATION LEFT PALM**

**3 INCH LACERATION LEFT THIGH COVERED  
WITH BLOOD SOAKED BANDAGE**

**FRACTURED LEFT ANKLE**

**SCRAPE ON RIGHT KNEE**

**ITEMS IN RED MUST BE TREATED BY THE  
TEAM!**

**BLACK EYE**

**IMPALED OBJECT  
LEFT EYE**

**MEDICAL ALERT ID  
ASTHMA**

**1 INCH ABRASION  
LEFT CHEEK**

**2 INCH ABRASION  
OF RIGHT PALM**

**2 INCH  
LACERATION LEFT  
PALM**

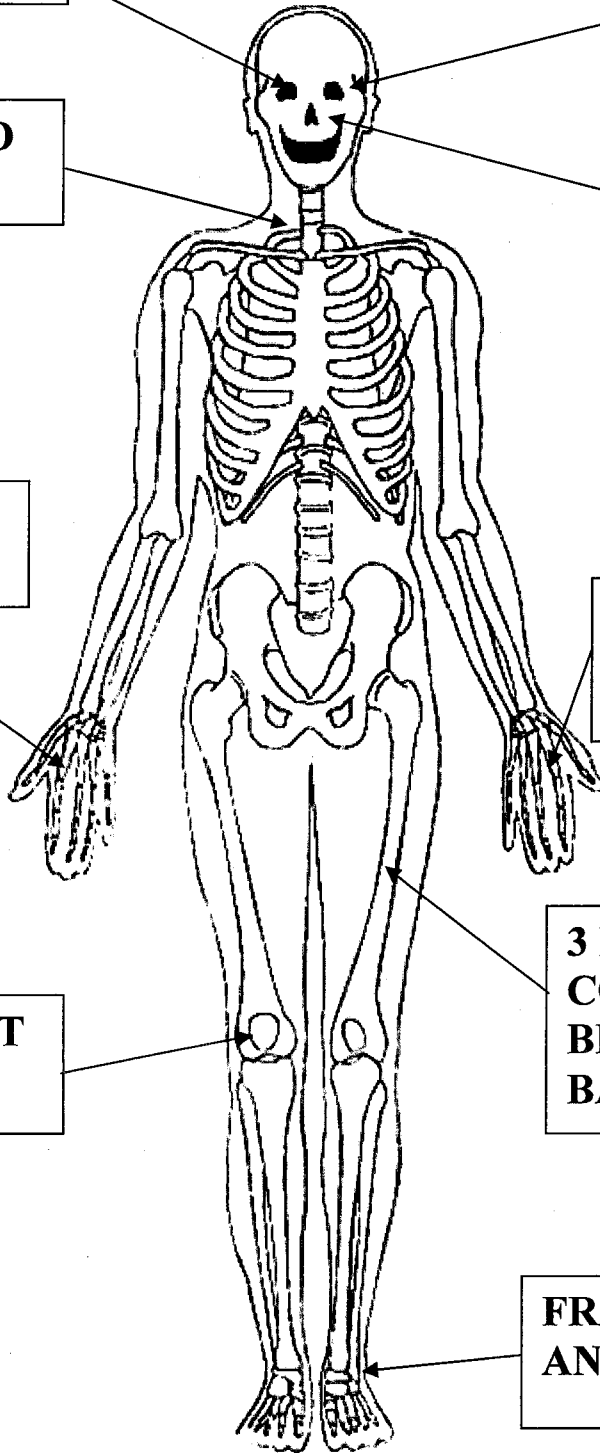
**SCRAPE ON RIGHT  
KNEE**

**3 INCH LACERATION  
COVERED WITH  
BLOOD SOAKED  
BANDAGE**

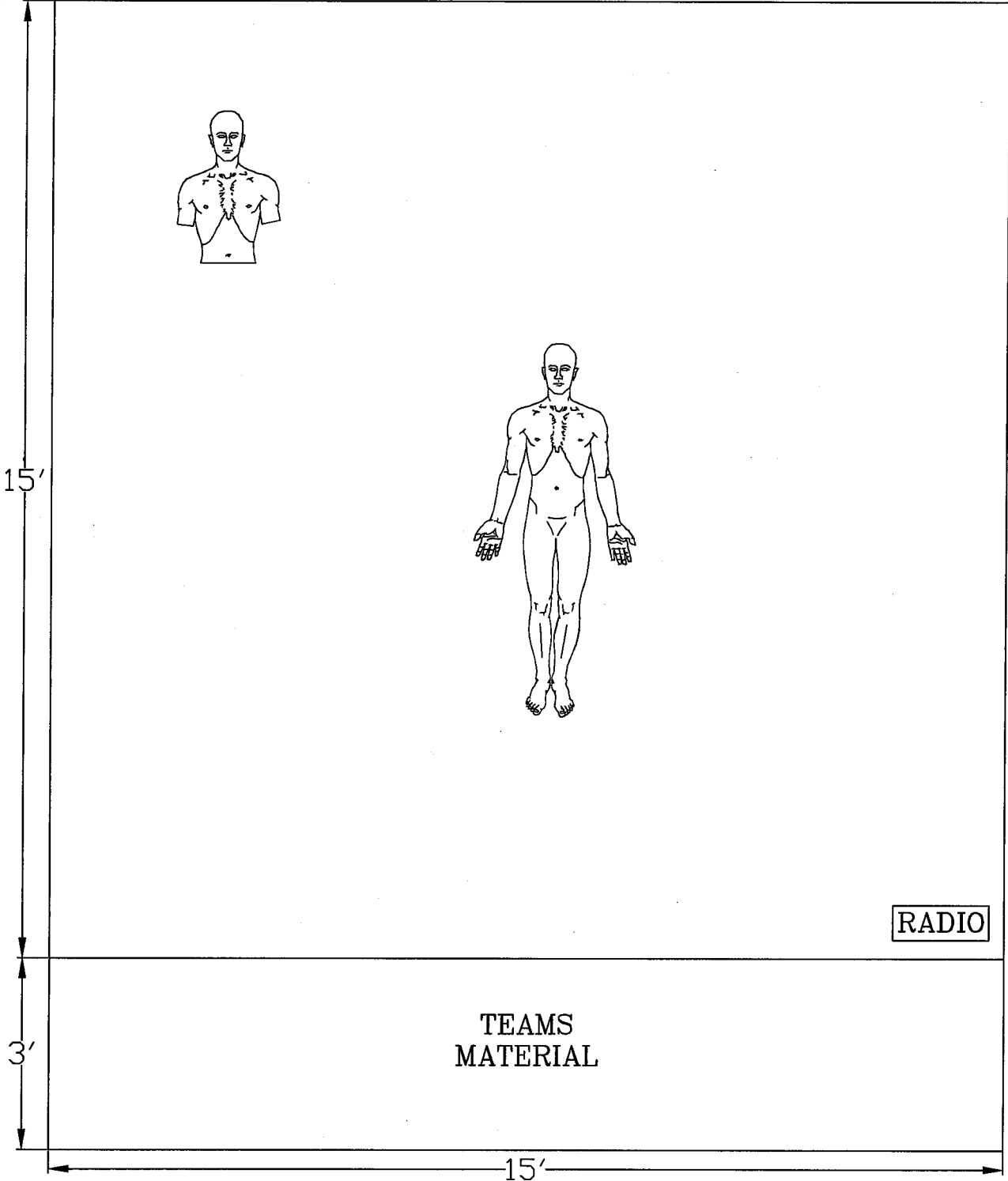
**SCRAPE ON RIGHT  
KNEE**

**FRACTURED LEFT  
ANKLE**

**RESPIRATIONS: 10 AND SHALLOW  
PULSE: 92  
PERFUSION: <2 SECONDS  
MENTAL STATUS: UNABLE TO  
FOLLOW COMMANDS**



# FIELD LAYOUT



## 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.

**THIS IS AN IMMEDIATE PATIENT BUT UNDER RULE 14 TRANSPORTATION IS DELAYED SO TEAM WILL HAVE TO TREAT ALL INJURIES .**

**TEAM MAY DO RAPID ASSESSMENT FIRST AND THEN TREAT. ANYTIME THEY ASK TRANSPORTATION IS NOT AVAILABLE!!!**

**AS SOON AS TEAM STARTS PATIENT ASSESSMENT GIVE TEAM ENVELOPE #1**

**YOUR PATIENT HAS STOPPED  
BREATHING BUT HAS A PULSE**

**AS SOON AS TEAM STARTS  
ARTIFICIAL VENTILATION GIVE  
THEM ENVELOPE #2**

**AFTER 2 MINUTES OF ARTIFICIAL  
VENTILATION YOUR PATIENT IS  
BREATHING ON HIS OWN!**

**IF TEAM STARTS CPR INSTEAD OF  
ARTIFICIAL VENTILATION  
DISCOUNT UNDER RULE 10 FOR  
FAILURE TO PROPERLY HANDLE  
EACH PATIENT!**

## MOUTH-TO-MASK RESUSCITATION

PROCEDURES		CRITICAL SKILL
1. ESTABLISH UNRESPONSIVENESS	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Tap or gently shake shoulders *B. "Are you OK?" C. Determine unconsciousness without compromising C-spine injury *D. "Call for help" *E. "Get AED" (Note: If AED is used, follow local protocol)
2. MONITOR PATIENT FOR BREATHING	<input type="checkbox"/>	A. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds)
3. CHECK FOR CAROTID PULSE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Correctly locate the carotid pulse (on the side of the rescuer) B. Check for presence of carotid pulse within 10 seconds *B. Presence of pulse
4. ESTABLISH AIRWAY	<input type="checkbox"/>	A. Correctly execute head tilt / chin lift or jaw thrust maneuver depending on the presence of cervical spine (neck) injuries
5. VENTILATE PATIENT	<input type="checkbox"/> <input type="checkbox"/>	A. Place barrier device (pocket mask/shield with one-way valve on manikin) B. Ventilate patient 10 to 12 times per minute. Each ventilation will be provided at a minimum of .8 (through .7 liter line on new manikins)
6. CHECK FOR RETURN OF BREATHING AND PULSE	<input type="checkbox"/> <input type="checkbox"/>	A. After providing the required number of breaths (outlined in problem), check for return of breathing and carotid pulse within 10 seconds *B. "Patient is breathing and has a pulse"

**CONTINUE PATIENT 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"/>	*A. Check head for DOTS: Deformities, Open wounds, Tenderness and Swelling *B. Check and touch the scalp *C. Check the face *D. Check the ears for bleeding or clear fluids *E. Check the eyes for any discoloration, unequal pupils, reaction to light, foreign objects and bleeding *F. Check the nose for any bleeding or drainage *G. Check the mouth for loose or broken teeth, foreign objects, swelling or injury of tongue, unusual breath odor and discoloration

**1 INCH ABRASION LEFT CHEEK  
NO TREATMENT REQUIRED**

**BLACK EYE RIGHT SIDE  
NO TREATMENT REQUIRED**

**IMPALED OBJECT IN LEFT EYE**

**TEAM MUST TREAT THIS AND BANDAGE  
BOTH EYES!**

## DRESSINGS AND BANDAGING - OPEN WOUNDS

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

### Impaled Objects in the Eye

1. Stabilize with 3 inch gauze or folded 4x4
2. Put cup (no Styrofoam) over object and allow cup to rest on roller gauze or 4x4
3. Secure cup with roller gauze (not over top of cup)
- \*4. Cover uninjured eye too

**CONTINUE PATIENT ASSESSMENT**

2. NECK	<input type="checkbox"/>	<input type="checkbox"/>	*A. Check the neck for DOTS *B. Inspect for medical ID(PATIENT HAS ONE FOR ASTHMA)
3. CHEST	<input type="checkbox"/>	<input type="checkbox"/>	*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"/>	*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	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 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

**SCRAPE ON RIGHT KNEE**

**NO TREATMENT REQUIRED**

**3 INCH LACERATION COVERED WITH BLOOD SOAKED BANDAGE**

**GIVE TEAM ENVELOPE #3**

**THIS IS NOW UNCONTROLLED LIFE-THREATENING BLEEDING!**

## LIFE-THREATENING BLEEDING

PROCEDURES	CRITICAL SKILL
1. DIRECT PRESSURE AND ELEVATION	<input type="checkbox"/> *A. Apply direct pressure with a gloved hand <input type="checkbox"/> *B. Apply a dressing to wound (cover entire wound) and continue to apply direct pressure <input type="checkbox"/> *C. Elevate the extremity except when spinal injury exists <input type="checkbox"/> *D. Bleeding has been controlled <b>(NO)</b> <input type="checkbox"/> *E. If controlled, bandage dressing in place
2. IF NOTIFIED THAT BLEEDING IS NOT CONTROLLED, PRESSURE POINTS SHALL BE UTILIZED	<input type="checkbox"/> *A. Apply pressure to appropriate pressure point and notify judge verbally that bleeding is controlled (Apply pressure to blood vessels leading to area - in arm, press just below armpit; in leg, press against groin where thigh and trunk join.) B. If controlled, bandage dressing in place <b>(NO)</b>
3. IF NOTIFIED THAT BLEEDING IS NOT CONTROLLED, APPLY TOURNIQUET	<input type="checkbox"/> A. Apply as per tourniquet skill sheet

### External Bleeding

To Control: 1st: direct pressure

2nd: elevation & direct pressure

3rd: pressure point

**Last Resort: Tourniquet**

## TOURNIQUET

PROCEDURES	CRITICAL SKILL
1. DETERMINE NEED OR USING TOURNIQUET	<input type="checkbox"/> If these conditions are met, a tourniquet may be the only alternative: <input type="checkbox"/> G. Direct pressure has not been successful in stopping bleeding <input type="checkbox"/> H. Elevation of wound above heart has not been successful in stopping of bleeding <input type="checkbox"/> I. Compression of pressure point has not been successful in stopping of bleeding.
2. SELECT APPROPRIATE MATERIALS	<input type="checkbox"/> A. Select a band that will be between 3-4 inches in width and can be wrapped six or eight layers deep for improvised tourniquet or select factory tourniquet.
3. APPLY TOURNIQUET	<input type="checkbox"/> Factory Tourniquet <input type="checkbox"/> I. Wrap band around the extremity proximal to the wound (one inch above but not on a joint) <input type="checkbox"/> Improvised Tourniquet <input type="checkbox"/> J. Apply a bandage around the extremity proximal to the wound (one inch above but not on a joint) and tie a half knot in the bandage <input type="checkbox"/> K. Place a stick or pencil on top of the knot and tie the ends of the bandage over the stick in a square knot <input type="checkbox"/> L. Twist the stick until the bleeding is controlled, secure the stick in position
4. APPLY PRESSURE WITH TOURNIQUET	<input type="checkbox"/> A. Do not cover the tourniquet with bandaging material <input type="checkbox"/> *B. Notify other medical personnel caring for the patient
5. MARK PATIENT APPROPRIATELY	<input type="checkbox"/> A. Mark a piece of tape on the patient's forehead "TQ" and time applied
6. REASSESS	<input type="checkbox"/> *A. Assess level of consciousness (AVPU), respiratory status, and patient response

## FRACTURED LEFT ANKLE

**TEAM WILL PROBABLY USE FACTORY SPLINT BUT  
MAY USE ANY OPTION OUTLINED BELOW!**

### 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: J. Pain K. Swelling L. Deformity B. Determine if splinting is warranted
2. APPLY MANUAL STABILIZATION	<input type="checkbox"/>	M. Support affected limb and limit movement <ul style="list-style-type: none"> <li>• Do not attempt to reduce dislocations</li> </ul>
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 (SOFT) LOWER EXTREMITY FRACTURES AND DISLOCATIONS  
(ANKLE AND FOOT)**

PROCEDURES	CRITICAL SKILL
1. CARE FOR FRACTURE	<input type="checkbox"/> *A. Assess for distal circulation, sensation, and motor function <input type="checkbox"/> B. Do not attempt to reduce dislocations (if applies)
2. IMMOBILIZING FRACTURE	<input type="checkbox"/> A. Support affected limb and limit movement <input type="checkbox"/> B. Place three cravats (triangular bandage) under ankle/foot <input type="checkbox"/> C. Place pillow length wise under ankle/foot, on top of cravats (pillow should extend 6 inches beyond foot) <input type="checkbox"/> D. Lower limb, adjust cravats to tie <input type="checkbox"/> E. Tie cravats distal to proximal <input type="checkbox"/> F. Elevate with blanket or pillow <input type="checkbox"/> *G. Reassess distal circulation, sensation, and motor function

**CONTINUE PATIENT ASSESSMENT**

	L	R	
7. ARMS	<input type="checkbox"/>	<input type="checkbox"/>	*A. Check each arm for DOTS
	<input type="checkbox"/>	<input type="checkbox"/>	B. Inspect arms for injury by touch
	<input type="checkbox"/>	<input type="checkbox"/>	C. Unresponsive: Check arms for paralysis (pinch inner side of wrist)
	<input type="checkbox"/>	<input type="checkbox"/>	*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?")
	<input type="checkbox"/>	<input type="checkbox"/>	*E. Check for medical ID bracelet

**2 INCH ABRASION OF RIGHT PALM**

**NO TREATMENT REQUIRED!**



## 2 INCH LACERATION LEFT PALM

### DRESSINGS AND BANDAGING - OPEN WOUNDS

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

### CONTINUE PATIENT ASSESSMENT

8. BACK SURFACES	<input type="checkbox"/>	*A. Check back for DOTS
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**AS SOON AS TEAM STARTS TO SECURE PATIENT TO BACKBOARD GIVE THEM ENVELOPE #4**

# A MANTRIP IS NOW AVAILABLE FOR YOU TO TRANSPORT YOUR PATIENT TO THE SURFACE!

## 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 1: Elevate the lower extremities or foot end of the back board.**

This procedure is performed in most cases. Place the patient flat, face up and elevate the legs or foot end of the back board 8 to 12 inches. Do not elevate any limbs with possible fractures or pelvic injuries until they have been properly splinted. Remember to consider the mechanism of injury for every patient.

**TEAM SHOULD LIFT BACKBOARD AND STATE  
TRANSPORTING PATIENT, CLEAN THE FIELD  
AND STOP THE CLOCK!**