

# KENTUCKY RIVER MINE RESCUE CONTEST



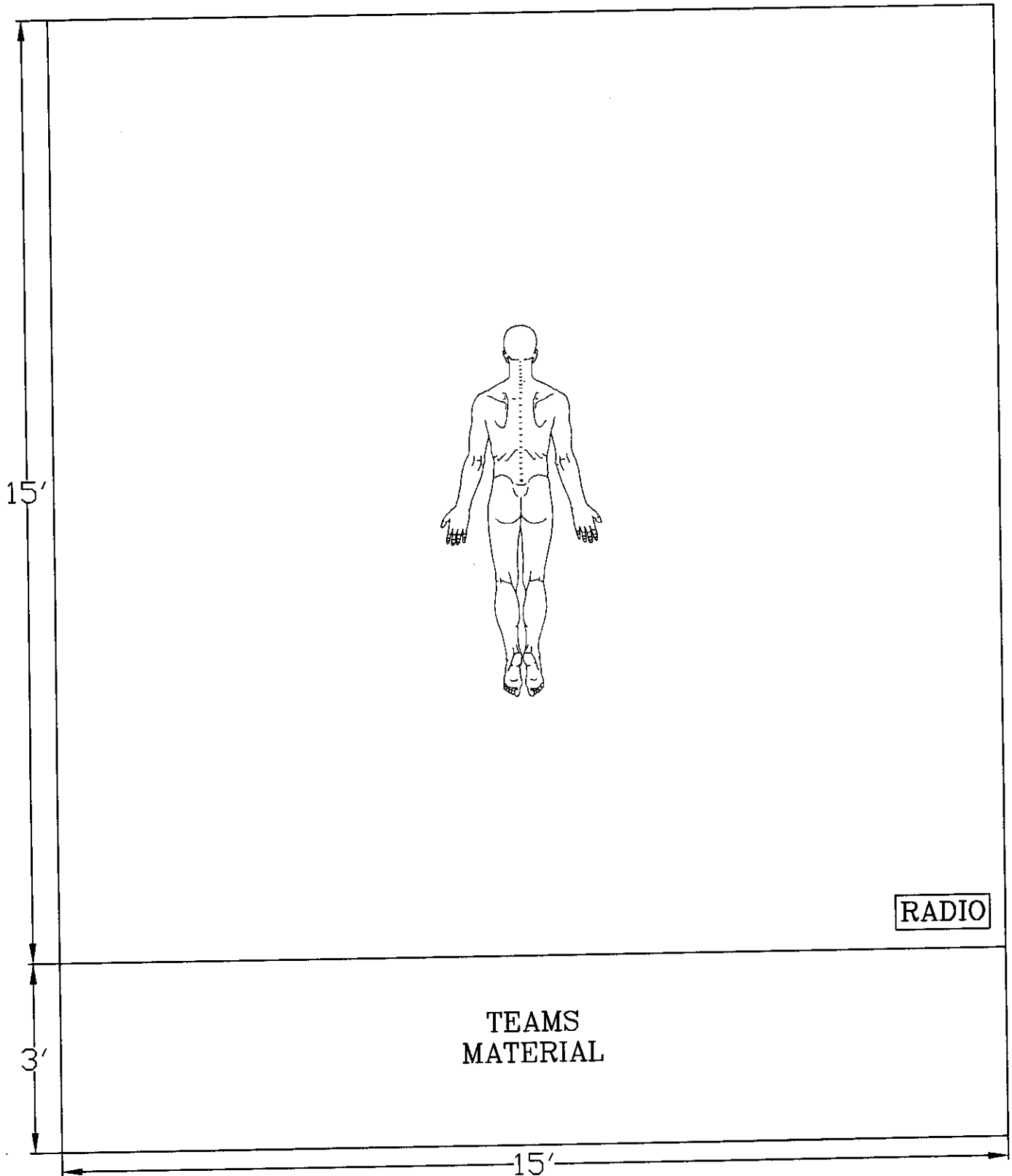
**FIRST AID PROBLEM**

**2014**

# **PROBLEM**

**Chuck Finley is standing on the #4 belt working on a scraper for the #5 head drive prior to the start of production when the belt suddenly starts up. Chuck is carried down the belt and under a turn chute at the 3A belt drive. Jim Bob witnessed the accident, shut off the belt and went to find help. You and your partner have been dispatched to the scene and find Chuck lying on the mine floor. You know that Chuck has recently been off work due to a blood clot in his lower leg and is taking Coumadin daily. Notify dispatch by radio that you have arrived on the scene and when Chuck is ready for transport. Please help Chuck.**

# FIELD LAYOUT



# **LIST OF INJURIES**

**2 INCH LACERATION LEFT WRIST**

**2 INCH ABRASION ON FOREHEAD**

**FOREIGN OBJECT AND CUT IN LEFT EYE**

**CLOSED FRACTURE RIGHT RIB**

**INTERNAL BLEEDING IN ABDOMEN**

**DISLOCATED RIGHT KNEE**

**3 INCH LACERATION LEFT THIGH**

**CLOSED FRACTURE LEFT TIBIA AND FIBULA**

**OPEN MID-SHAFT FRACTURED HUMERUS**

**2 INCH ABRASION  
ON FOREHEAD**

**RESPIRATIONS: 28  
PERFUSION: 1 SECOND  
MENTAL STATUS: ABLE TO  
FOLLOW COMMANDS**

**FOREIGN OBJECT  
AND CUT IN LEFT EYE**

**OPEN MID-SHAFT  
FRACTURED  
HUMERUS**

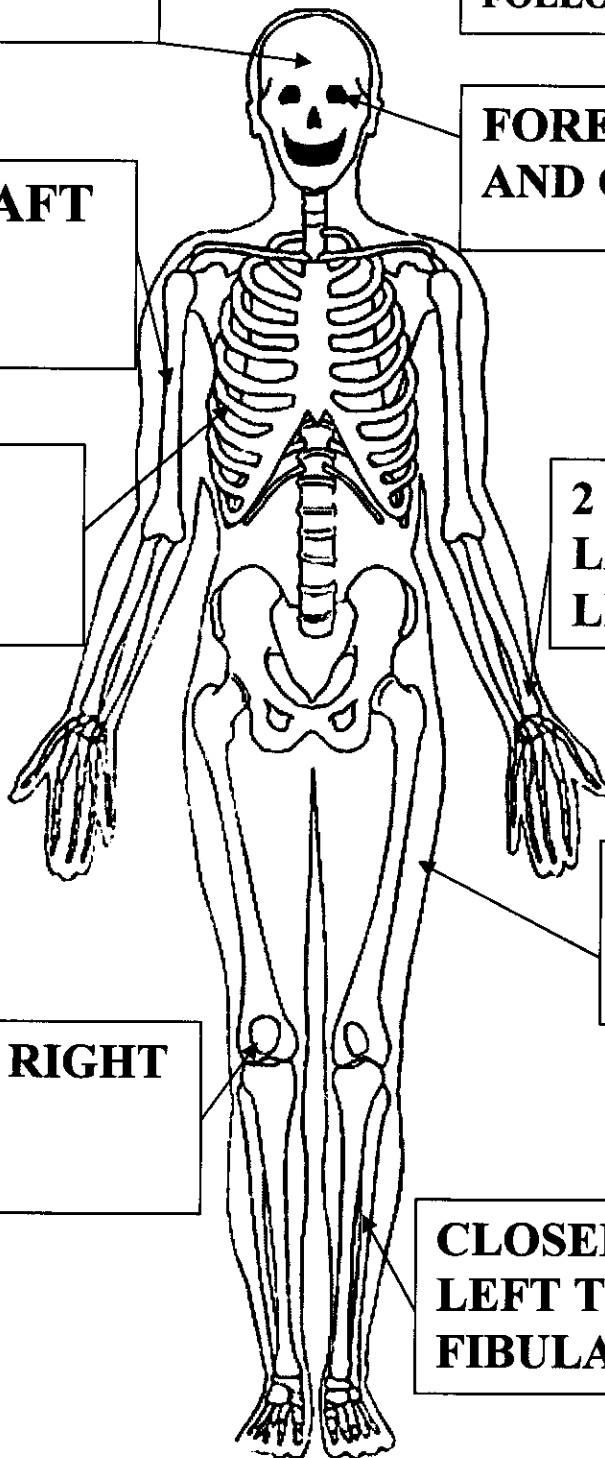
**CLOSED  
FRACTURE  
RIGHT RIB**

**2 INCH  
LACERATION  
LEFT WRIST**

**3 INCH  
LACERATION  
LEFT THIGH**

**DISLOCATED RIGHT  
KNEE**

**CLOSED FRACTURE  
LEFT TIBIA AND  
FIBULA**



## INITIAL ASSESSMENT

PROCEDURES	CRITICAL SKILL	
1. SCENE SIZE UP	<input type="checkbox"/> <input type="checkbox"/>	*A. Observe area to ensure safety *B. Call for help
2. MECHANISM OF INJURY	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	*A. Determine causes of injury, if possible *B. Triage: Immediate, Delayed, Minor or Deceased. *C. Ask patient (if conscious) what happened
3. INITIAL ASSESSMENT	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	*A. Verbalize general impression of the patient(s) *B. Determine responsiveness/level of consciousness (AVPU) Alert, Verbal, Painful, Unresponsive *C. Determine chief complaint/apparent life threat

## TWO-PERSON LOG ROLL

PROCEDURES	CRITICAL SKILL	
1. STABILIZE HEAD	<input type="checkbox"/>	*A. Stabilize the head and neck
2. PREPARING THE PATIENT	<input type="checkbox"/> <input type="checkbox"/>	A. When placing patient on board place board parallel to the patient B. Kneel at the patient's shoulders opposite the board (if used) leaving room to roll the patient toward knees Raise the patient's arm, if not injured (the one closer to the rescuer) above the patient's head
3. PREPARING THE RESCUER	<input type="checkbox"/> <input type="checkbox"/>	A. Grasp the patient at the shoulder and pelvis area B. Give instructions to bystander, if used to support
4. ROLLING THE PATIENT	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. While stabilizing the head, roll the patient toward the rescuer by pulling steadily and evenly at the shoulder and pelvis areas B. The head and neck should remain on the same plane as the torso C. Maintain stability by holding patient with one hand and placing board (if used) with other D. Roll the body as a unit onto the board (if used) (board may be slanted or flat) E. Place the arm alongside the body

## CONTINUE INTIAL ASSESSMENT

4. ASSESS AIRWAY AND BREATHING	<input type="checkbox"/>  <input type="checkbox"/>  <input type="checkbox"/>	<p>A. Correctly execute head-tilt/chin-lift or jaw thrust maneuver, depending on the presence of cervical spine (neck) injuries</p> <p>B. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds)</p> <p>C. If present, treat sucking chest wound</p>
5. ASSESS FOR CIRCULATION	<input type="checkbox"/>  <input type="checkbox"/>  <input type="checkbox"/>	<p>A. Check for presence of a carotid pulse (5-10 seconds)</p> <p>B. If present, control life threatening bleeding</p> <p>C. Start treatment for all other life threatening injuries/conditions (reference Rule 2).</p>

**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**.

**DELAYED:** Detailed Patient Assessment treating all injuries and conditions and prepare for transport.

**MINOR:** (Can walk) Detailed Patient Assessment treating all injuries and conditions and prepare for transport. After all **IMMEDIATE** and **DELAYED** patient(s) have been treated and transported.

**DECEASED:** Cover

**NOTE:** Each critical skill identified with an asterisk (\*) shall be clearly verbalized by the team as it is being conducted. After initially stating what **DOTS** stands for, the team may simply state "**DOTS**" when making their checks.

- Teams may use the acronym "**CSM**" when checking circulation, sensation, and motor function.

## CHUCK IS A DELAYED PATIENT

# 2 INCH LACERATION LEFT WRIST

## 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 <input type="checkbox"/> *E. If controlled, bandage dressing in place

## BLEEDING IS NOT CONTROLLED

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.) <input type="checkbox"/> B. If controlled, bandage dressing in place
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## BLEEDING IS NOT CONTROLLED

3. IF NOTIFIED THAT BLEEDING IS NOT CONTROLLED, APPLY TOURIQUET	<input type="checkbox"/> A. Apply as per tourniquet skill sheet
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### External Bleeding

To Control: 1<sup>st</sup>: direct pressure  
 2<sup>nd</sup>: elevation & direct pressure  
 3<sup>rd</sup>: pressure point  
 Last Resort: Tourniquet



## TOURNIQUET

PROCEDURES	CRITICAL SKILL
1. DETERMINE NEED OR USING TOURNIQUET	<p>If these conditions are met, a tourniquet may be the only alternative:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> A. Direct pressure has not been successful in stopping bleeding</li> <li><input type="checkbox"/> B. Elevation of wound above heart has not been successful in stopping of bleeding</li> <li><input type="checkbox"/> C. Compression of pressure point has not been successful in stopping of bleeding.</li> </ul>
2. SELECT APPROPRIATE MATERIALS	<ul style="list-style-type: none"> <li><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.</li> </ul>
3. APPLY TOURNIQUET	<ul style="list-style-type: none"> <li><input type="checkbox"/> Factory Tourniquet               <ul style="list-style-type: none"> <li>A. Wrap band around the extremity proximal to the wound (one inch above but not on a joint)</li> </ul> </li> <li><input type="checkbox"/> Improvised Tourniquet               <ul style="list-style-type: none"> <li>B. 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</li> <li>C. Place a stick or pencil on top of the knot and tie the ends of the bandage over the stick in a square knot</li> <li>D. Twist the stick until the bleeding is controlled, secure the stick in position</li> </ul> </li> </ul>
4. APPLY PRESSURE WITH TOURNIQUET	<ul style="list-style-type: none"> <li><input type="checkbox"/> A. Do not cover the tourniquet with bandaging material</li> <li><input type="checkbox"/> *B. Notify other medical personnel caring for the patient</li> </ul>
5. MARK PATIENT APPROPRIATELY	<ul style="list-style-type: none"> <li><input type="checkbox"/> A. Mark a piece of tape on the patient's forehead "TQ" and time applied</li> </ul>
6. REASSESS	<ul style="list-style-type: none"> <li><input type="checkbox"/> *A. Assess level of consciousness (AVPU), respiratory status, and patient response</li> </ul>

## 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

**2 INCH ABRASION ON FOREHEAD  
NO TREATMENT REQUIRED**

# FOREIGN OBJECT WITH CUT IN LEFT EYE

## 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"/>	*A. Control bleeding *B. Prevent further contamination *C. Bandage dressing in place after bleeding has been controlled *D. Keep patient lying still
2. APPLY DRESSING	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Use sterile dressing B. Cover entire wound C. Control bleeding D. Do not remove dressing
3. APPLY BANDAGE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A. Do not bandage too tightly. B. Do not bandage too loosely. C. Do not leave loose ends. D. Cover all edges of dressing. E. Do not cover tips of fingers and toes, unless they are injured. F. 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 ASSESMENT

2. NECK	<input type="checkbox"/> <input type="checkbox"/>	*A. Check the neck for DOTS *B. Inspect for medical ID
3. CHEST	<input type="checkbox"/> <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

**CLOSED FRACTURE RIGHT RIB  
NO TREATMENT REQUIRED**

## CONTINUE PATIENT ASSESMENT

4. ABDOMEN	<input type="checkbox"/>	*A. Check abdomen (stomach) for DOTS
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## ENVELOPE

**CHUCK HAS TENDERNESS AND SWELLING OF THE ABDOMEN AND IS COMPLAINING OF EXTREME THIRST.**

**TEAM SHOULD RECONGNIZE THIS AS SYMPTONS OF INTERNAL BLEEDING AND VERBILIZE THE FOLLOWING:**

### Internal Bleeding

- \*1. Monitor breathing and pulse
- \*2. Keep patient still
- \*3. Loosen restrictive clothing
- \*4. Be alert if patient vomits
- \*5. Nothing by mouth
- \*6. Report possibility of internal bleeding as soon as EMS personnel arrive on scene

## CONTINUE PATIENT ASSESSMENT

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

## DISLOCATED 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: <ul style="list-style-type: none"> <li>▪ Pain</li> <li>▪ Swelling</li> <li>▪ Deformity</li> </ul> B. Determine if splinting is warranted
2. APPLY MANUAL STABILIZATION	<input type="checkbox"/>	A. 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



# 3 INCH LACERATION LEFT THIGH

## 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"/> A. Use sterile dressing <input type="checkbox"/> B. Cover entire wound <input type="checkbox"/> C. Control bleeding <input type="checkbox"/> D. Do not remove dressing
3. APPLY BANDAGE	<input type="checkbox"/> A. Do not bandage too tightly. <input type="checkbox"/> B. Do not bandage too loosely. <input type="checkbox"/> C. Do not leave loose ends. <input type="checkbox"/> D. Cover all edges of dressing. <input type="checkbox"/> E. Do not cover tips of fingers and toes, unless they are injured. <input type="checkbox"/> F. Bandage from the bottom of the limb to the top (distal to proximal) if applicable.

# CLOSED FRACTURE LEFT TIBIA AND FIBULA

## 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: <ul style="list-style-type: none"> <li>▪ Pain</li> <li>▪ Swelling</li> <li>▪ Deformity</li> </ul> B. Determine if splinting is warranted
2. APPLY MANUAL STABILIZATION	<input type="checkbox"/>	A. 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"/>	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





## CONTINUE PATIENT ASSESSMENT

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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

## OPEN MID-SHAFT FRACTURED HUMERUS

## 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 <ul style="list-style-type: none"> <li>▪ Do not attempt to reduce dislocations (if applies)</li> </ul>
2. IMMOBILIZING FRACTURE	<input type="checkbox"/> A. Selection of appropriate rigid splint of proper length <input type="checkbox"/> B. Support affected limb and limit movement <input type="checkbox"/> C. Apply appropriate padded rigid splint against injured extremity <input type="checkbox"/> D. Place appropriate roller bandage in hand to ensure the position of function <input type="checkbox"/> E. Secure splint to patient with roller bandage, handkerchiefs, cravats, or cloth strips <input type="checkbox"/> F. Apply wrap distal to proximal <input type="checkbox"/> *H. Reassess distal circulation, sensation, and motor function
3. SECURING WITH SLING	<input type="checkbox"/> A. Place sling over chest and under arm <input type="checkbox"/> B. Hold or stabilize arm <input type="checkbox"/> C. Triangle should extend behind elbow on injured side <input type="checkbox"/> D. Pull sling around neck and tie on uninjured side <input type="checkbox"/> E. Pad at the neck (except when C-Collar is present) <input type="checkbox"/> F. Secure excess material at elbow <input type="checkbox"/> G. Fingertips should be exposed <input type="checkbox"/> *H. Reassess distal circulation, sensation, and motor function
4. SECURING SLING WITH SWATHE	<input type="checkbox"/> A. Use triangle cravat or factory swathe <input type="checkbox"/> B. Swathe is tied around chest and injured arm <input type="checkbox"/> *C. Reassess distal circulation, sensation, and motor function

### CONTINUE PATIENT ASSESMENT

8. BACK SURFACES	<input type="checkbox"/>	*A. Check back for DOTS
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## IMMOBILIZATION - LONG SPINE BOARD (Backboard)

PROCEDURES	CRITICAL SKILL
1. MOVE THE PATIENT ONTO THE LONG SPINE BOARD	<ul style="list-style-type: none"> <li><input type="checkbox"/> A. One First Aid Provider at the head must maintain in-line immobilization of the head and spine</li> <li><input type="checkbox"/> B. First Aid Provider at the head directs the movement of the patient</li> <li><input type="checkbox"/> C. Other First Aid Provider control movement of the rest of body</li> <li><input type="checkbox"/> D. Other First Aid Provider position themselves on same side</li> <li><input type="checkbox"/> E. Upon command of First Aid Provider at the head, roll patient onto side toward First Aid Providers</li> <li><input type="checkbox"/> F. Quickly assess posterior body, if not already done</li> <li><input type="checkbox"/> G. Place long spine board next to the patient with top of board beyond top of head</li> <li><input type="checkbox"/> 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</li> <li><input type="checkbox"/> I. Slide patient into proper position using smooth coordinated moves keeping spine in alignment</li> </ul>
2. PAD VOIDS BETWEEN PATIENT AND LONG SPINE BOARD	<ul style="list-style-type: none"> <li><input type="checkbox"/> A. Select and use appropriate padding</li> <li><input type="checkbox"/> B. Place padding as needed under the head</li> <li><input type="checkbox"/> C. Place padding as needed under torso</li> </ul>
3. IMMOBILIZE BODY TO THE LONG SPINE BOARD	<ul style="list-style-type: none"> <li><input type="checkbox"/> A. Strap and secure body to board ensuring spinal immobilization, beginning at shoulder and working toward feet</li> </ul>
4. IMMOBILIZE HEAD TO THE LONG SPINE BOARD	<ul style="list-style-type: none"> <li><input type="checkbox"/> A. Using head set or place rolled towels on each side of head</li> <li><input type="checkbox"/> B. Tape and/or strap head securely to board, ensuring cervical spine immobilization</li> </ul>
5. REASSESS	<ul style="list-style-type: none"> <li><input type="checkbox"/> *A. Reassess distal circulation, sensation, and motor function</li> <li><input type="checkbox"/> *B. Assess patient response and level of comfort</li> </ul>

## SHOCK

PROCEDURES	CRITICAL SKILL
1. CHECK FOR SIGNS AND SYMPTOMS OF SHOCK	<input type="checkbox"/> *A. Check for pale (or bluish) skin (in victim with dark skin examine inside of mouth and nail beds for bluish coloration. <input type="checkbox"/> *B. Check for cool, clammy skin <input type="checkbox"/> *C. Check for weakness
2. TREATMENT	<input type="checkbox"/> A. Keep victim lying down <input type="checkbox"/> 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) <input type="checkbox"/> C. Elevate according to injury <input type="checkbox"/> *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.

**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.

**Option 3: Slightly raise the head and shoulders.** This position should be used only for responsive patients with no spinal injuries, life threatening chest or abdominal injuries and only for patients having difficulty breathing, but who have an open airway. A semi-seated position can also be used for patients with a history of heart problems. It is not recommended for moderate to severe cases of shock. Be certain to keep the patient's head from tilting forward.

Note: Injuries requiring the injured side to be tilted or placed down may be done after patient has been properly secured to a back board if a back board is required.