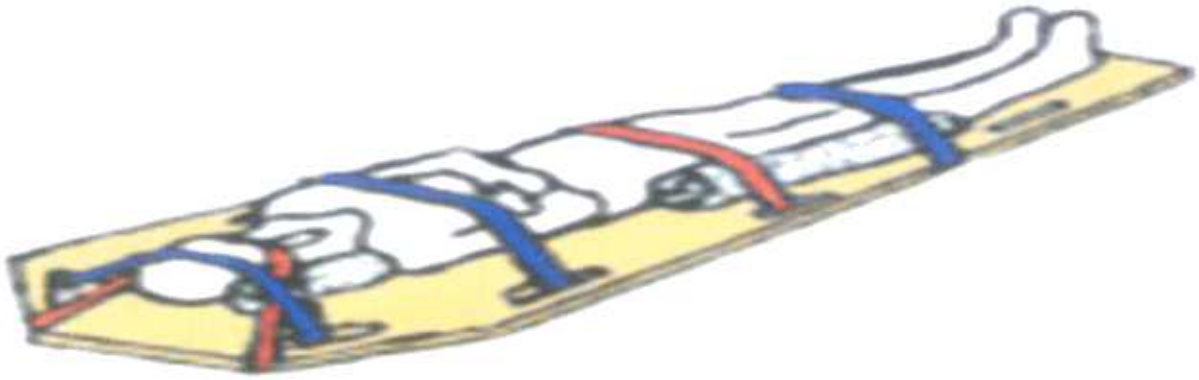
KENTUCKY STATE

MINE RESCUE CONTEST

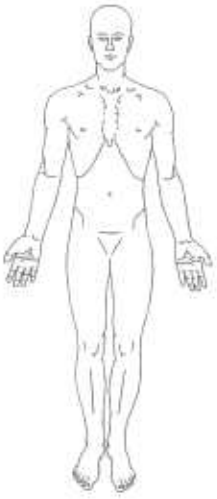
FIRST AID PROBLEM



2017

YOU, YOUR PARTNER AND TOM ARE TRAVELING DOWN THE SLOPE AT THE WILDCAT #4 MINE ON A RUBBER TIRED BATTERY RIDE WHEN TOM FALLS OFF. HIS LEFT ARM GOT TANGLED ON THE RIDE AND HE WAS DRAGGED ABOUT 15 FEET BEFORE YOU GOT STOPPED. PLEASE HELP TOM!

FIELD LAYOUT



15′

RADIO

TEAMS
MATERIAL

3′

15′

LIST OF INJURIES

1 INCH ABRASION RIGHT CHEEK

(NO TREATMENT REQUIRED)

AVULSED LEFT EAR

4 INCH OPEN WOUND LOWER ABDOMEN

2 INCH ABRASION ON RIGHT KNEE

(NO TREATMENT REQUIRED)

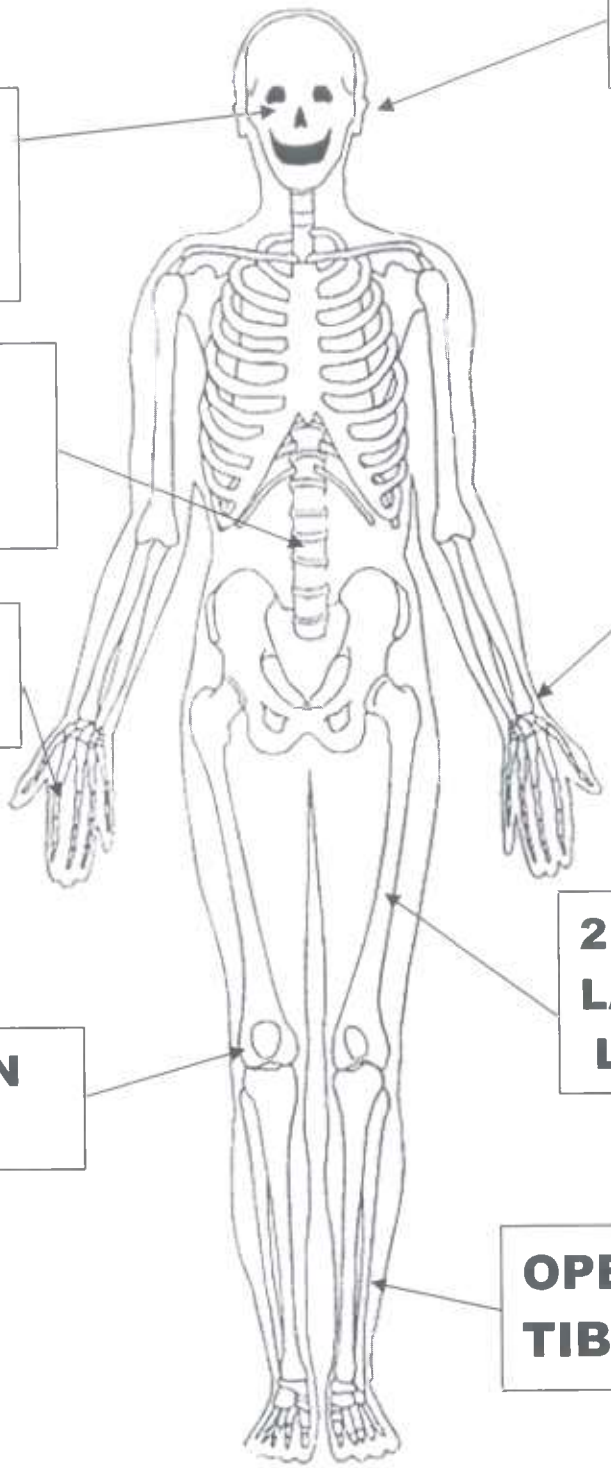
2 INCH LACERATION LEFT THIGH

OPEN FRACTURE TIBIA AND FIBULA

2 INCH ABRASION RIGHT PALM

(NO TREATMENT REQUIRED)

FRACTURED LEFT WRIST



AVULSED
LEFT EAR

1 INCH
ABRASION
RIGHT CHEEK

4 INCH OPEN
WOUND
LOWER ABDOMEN

2 INCH ABRASION
RIGHT PALM

FRACTURED
LEFT WRIST

2 INCH
LACERATION
LEFT THIGH

2 INCH ABRASION
ON RIGHT KNEE

OPEN FRACTURE
TIBIA AND FIBULA

RESPIRATIONS: 12
PULSE: RAPID AND WEAK
PERFUSION: <2 SECONDS
MENTAL STATUS: ABLE TO
FOLLOW COMMANDS

INITIAL ASSESSMENT

PROCEDURES		CRITICAL SKILL
1. SCENE SIZE UP	☐ ☐	*A. Observe area to ensure safety *B. Call for help
2. MECHANISM OF INJURY	☐ ☐ ☐	*A. Determine causes of injury, if possible *B. Triage: Immediate, Delayed, Minor or Deceased. *C. Ask patient (if conscious) what happened
3. INITIAL ASSESSMENT	☐ ☐ ☐	*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
4. ASSESS AIRWAY AND BREATHING	☐ ☐ ☐	A. Correctly execute head-tilt/chin-lift or jaw thrust maneuver, depending on the presence of cervical spine (neck) injuries B. Look for absence of breathing (no chest rise and fall) or gasping, which are not considered adequate (within 10 seconds) C. If present, treat sucking chest wound
5. ASSESS FOR CIRCULATION	☐ ☐ ☐	A. Check for presence of a carotid pulse (5-10 seconds) B. If present, control life threatening bleeding 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**.

TOM IS A DELAYED PATIENT. TEAM WILL HAVE TO DO A COMPLETE ASSESSMENT AND TREAT ALL INJURIES REQUIRING TREATMENT.

PATIENT ASSESSMENT

PROCEDURES		CRITICAL SKILL
1. HEAD	☐	*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 RIGHT CHEEK

NO TREATMENT REQUIRED

AVULSED LEFT EAR

DRESSINGS AND BANDAGING – OPEN WOUNDS

PROCEDURES		CRITICAL SKILL
1. EMERGENCY CARE FOR AN OPEN WOUND	☐	*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	☐	A. Use sterile dressing
	☐	B. Cover entire wound
	☐	C. Control bleeding
	☐	D. Do not remove dressing
3. APPLY BANDAGE	☐	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.

CONTINUE PATIENT ASSESSMENT

2. NECK	□ □	*A. Check the neck for DOTS *B. Inspect for medical ID
3. CHEST	□ □ □	*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	□	*A. Check abdomen (stomach) for DOTS

4 INCH OPEN WOUND LOWER ABDOMEN

DRESSINGS AND BANDAGING – OPEN WOUNDS

PROCEDURES		CRITICAL SKILL
1. EMERGENCY CARE FOR AN OPEN WOUND	□ □ □ □	*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	□ □ □ □	A. Use sterile dressing B. Cover entire wound C. Control bleeding D. Do not remove dressing
3. APPLY BANDAGE	□ □ □ □ □ □	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.

Abdominal Injury

*1. Place on back with legs flexed at the knees (for closed or open wounds)

Additional Steps for Open Abdominal Wounds (Serious or Life Threatening)

*1. Apply moist dressing, then an occlusive dressing
*2. Cover the occlusive with pads or a towel for warmth

CONTINUE PATIENT ASSESSMENT

ENVELOPE #1

TOM TELLS YOU HE FEELS COLD AND HIS CHEST IS HURTING.

5. PELVIS	□ □		*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 □ □ □ □ □	R □ □ □ □ □	*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

2 INCH ABRASION RIGHT KNEE

NO TREATMENT REQUIRED

2 INCH LACERATION LEFT THIGH

DRESSINGS AND BANDAGING – OPEN WOUNDS

PROCEDURES		CRITICAL SKILL
1. EMERGENCY CARE FOR AN OPEN WOUND	☐ ☐ ☐ ☐	*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	☐ ☐ ☐ ☐	A. Use sterile dressing B. Cover entire wound C. Control bleeding D. Do not remove dressing
3. APPLY BANDAGE	☐ ☐ ☐ ☐ ☐ ☐	A. Do not bandage too tightly. B. Do not bandage too loosely. C. Do not leave loose ends. E. Cover all edges of dressing. F. Do not cover tips of fingers and toes, unless they are injured. G. Bandage from the bottom of the limb to the top (distal to proximal) if applicable.

OPEN FRACTURE TIBIA AND FIBULA

DRESSINGS AND BANDAGING – OPEN WOUNDS

PROCEDURES		CRITICAL SKILL
1. EMERGENCY CARE FOR AN OPEN WOUND	☐	*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	☐	A. Use sterile dressing
	☐	B. Cover entire wound
	☐	C. Control bleeding
	☐	D. Do not remove dressing
3. APPLY BANDAGE	☐	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.

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

PROCEDURE		CRITICAL SKILL
1. DETERMINE NEED FOR SPLINTING	□ □	*A. Assess for: B. Pain C. Swelling D. Deformity E. Determine if splinting is warranted
2. APPLY MANUAL STABILIZATION	□	A. Support affected limb and limit movement B. Do not attempt to reduce dislocations
3. SELECT APPROPRIATE SPLINT	□ □	A. Select appropriate splinting method depending on position of extremity and materials available B. Select appropriate padding material
4. PREPARE FOR SPLINTING	□ □ □ □ □	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

5. SPLINT	☐	A. Maintain support while splinting
	☐	Living Splint:
	☐	A. Immobilize the site of the injury
	☐	B. Carefully place a pillow or folded blanket between the patients knees/legs
	☐	C. Bind the legs together with wide straps or cravats
	☐	D. Carefully place patient on long spine board
	☐	E. Secure the patient to the long spine board (if primary splint)
	☐	*F. Reassess distal circulation, sensation, and motor function
		Padded Board Splint:
	☐	A. Splint with two long padded splinting boards (one should be long enough to extend from the patient's armpit to beyond the foot. The other should extend from the groin to beyond the foot.) (Lower leg requires boards to extend from knee to below the foot.)
	☐	B. Cushion with padding in the armpit and groin and all voids created at the ankle and knee
	☐	C. Secure the splinting boards with straps and cravats
	☐	D. Carefully place the patient on long spine board
	☐	E. Secure the patient to the long spine board (if primary splint)
	☐	*F. Reassess distal circulation, sensation, and motor function
	☐	Other Splints:
		A. Immobilize the site of the injury
		B. Pad as needed
		C. Secure to splint distal to proximal
		D. Carefully place patient on long spine board
		E. Secure the patient to the long spine board (if primary splint)
		*F. Reassess distal circulation, sensation, and motor function
6. REASSESS	☐	*A. Assess patient response and level of comfort

CONTINUE PATIENT ASSESSMENT

	L	R	
7. ARMS	☐	☐	*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

2 INCH ABRASION OF RIGHT PALM

NO TREATMENT REQUIRED

FRACTURED LEFT WRIST

SPLINTING (RIGID) UPPER EXTREMITY FRACTURES AND DISLOCATIONS

PROCEDURES		CRITICAL SKILL
1. CARE FOR FRACTURE	☐	*A. Check for distal circulation, sensation, and motor function ▪ Do not attempt to reduce dislocations (if applies)
2. IMMOBILIZING FRACTURE	☐ ☐ ☐ ☐ ☐ ☐ ☐	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	☐ ☐ ☐	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	□ □ □	A. Use triangle cravat or factory swathe B. Swathe is tied around chest and injured arm *C. Reassess distal circulation, sensation, and motor function

CONTINUE PATIENT ASSESSMENT

2. BACK SURFACES	□	*A. Check back for DOTS

ENVELOPE #2

TOM HAS STOPPED BREATHING AND DOES NOT HAVE A PULSE.

TW0-RESCUER CPR WITH AED (NO SPINAL INJURY – MANIKIN ONLY)

PROCEDURES		CRITICAL SKILL
1. RESCUER 1 – ESTABLISH UNRESPONSIVENESS	□ □ □ □ □	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)
2. RESCUER 1 – MONITOR PATIENT FOR BREATHING	□	A. Look for absence of breathing (no chest rise and fall) or gasping breaths, which are not considered adequate (within 10 seconds)
3. RESCUER 1 – CHECK FOR CAROTID PULSE	□ □ □	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 Seconds *C. Absence of pulse *D. Immediately starts CPR if no pulse
4. RESCUER 2 – POSITION FOR COMPRESSIONS	□ □ □	A. Locate the compression point on the breastbone between the nipples B. Place the heel of one hand on the compression point and the other hand on top of the first so hands are parallel. C. Do not intentionally rest fingers on the chest. Keep heel of your hand on chest during and between compressions.
5. RESCUER 2 - DELIVER CARDIAC COMPRESSION	□ □ □ □	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
6. RESCUER 1 - ESTABLISH AIRWAY	□ □	A. Kneel at the patient's side near the head *B Correctly execute head-tilt/ chin-lift maneuver

7. RESCUER 1 - VENTILATIONS BETWEEN COMPRESSIONS	□ □ □ □	A. Place barrier device (pocket mask / shield with one way valve) on manikin *B. Give 2 breaths 1 second each *C. Each breath - minimum of .8 (through .7 liter line on new manikins) *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.)
8. CONTINUE CPR FOR TIME STATED IN PROBLEM	□ □ □ □ □ □	A. Provide 5 cycles of 30 chest compressions and 2 rescue breaths B. To check for pulse, stop chest compressions for no more than 10 seconds after the first set of CPR C. Rescuer at patient's head maintains airway and checks for adequate breathing or coughing D. The rescuer at the patient's head shall feel for a carotid pulse E. If no signs of circulation are detected, continue chest compressions and breaths and check for signs of circulation after each set 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
9. SECOND RESCUER ARRIVES WITH AED (DURING FIFTH SET OF COMPRESSIONS)	□ □ □	A. First rescuer continues compressions while second rescuer turns on AED and applies pads. B. RESCUERS SWITCH-First rescuer clears victim, allowing AED to analyze. (Judges shall provide an envelope indicating a shockable or **non-shockable** rhythm) C. If AED indicates a shockable rhythm, first rescuer clears victim again and delivers shock.
10. RESUME HIGH-QUALITY CPR	□ □	A. Second rescuer gives 30 compressions immediately after shock delivery (2 cycles). B. First rescuer successfully delivers 2 breaths.
11. CHANGING RESCUERS	□	A. Change of rescuers shall be made in 5 seconds or less and will be completed as outlined in the problem. Team must switch every 5 cycles in less than 5 seconds.

12. CHECK FOR RETURN OF PULSE	□ □	A. After providing required CPR (outlined in problem), check for return of pulse (within 10 seconds) *B. "Patient has a pulse."

ENVELOPE # 3

(GIVEN AT STEP 9 ITEM G)

THE AED STATES NO SHOCK ADVISED. CONTINUE CPR.

ENVELOPE #4

(GIVEN AT STEP 12)

AFTER 2 SETS OF 2 PERSON CPR TOM IS BREATHING AND HAS A GOOD PULSE.

IMMOBILIZATION - LONG SPINE BOARD (Backboard)

PROCEDURES		CRITICAL SKILL
1. MOVE THE PATIENT ONTO THE LONG SPINE BOARD	□	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	□	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	□	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	□	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	□	*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	☐ ☐ ☐	*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	☐ ☐ ☐ ☐	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 CLEAN THE FIELD AND STOP THE CLOCK.

KMI FIRST AID CONTEST

JUDGING GUIDANCE

TOM IS A DELAYED PATIENT. TEAM SHOULD PERFORM COMPLETE ASSESSMENT AND TREAT ALL INJURIES THAT REQUIRE A TREATMENT. ***Team should pick up backboard and state transporting patient. (Rule 15)***

ANY TIME THE TEAMS ASK BLEEDING IS CONTROLLED.

THE OPEN WOUND TO THE ABDOMEN IS NOT LIFE THREATING IF THE TEAMS ASK BUT IT IS SERIOUS. TREATMENTS REQUIRE A MOIST DRESSING, THEN OCCLUSIVE DRESSING, AND THEN COVER THE OCCLUSIVE DRESSING WITH PADS, TOWELS OR BLANKET FOR WARMTH. THIS IS A 4INCH OPEN WOUND SO WATCH TO ENSURE THE DRESSING'S USED ARE LARGER THAN 4 INCHES. TEAMS CAN SIMULATE THE MOIST DRESSING. TEAMS SHOULD NOT FLEX THE PATIENTS KNEES SINCE HE HAS AN OPEN FRACTURE OF THE LEFT LEG. (DISCOUNT UNDER RULE 10 FOR MISHANDLING PATIENT).

TEAM MUST EXAM EACH AREA OF THE BODY IN ITS ENTIRETY BEFORE STARTING ANY TREATMENTS. (RULE 15)

WATCH THAT TEAMS USE A SLING AND SWATH FOR THE LEFT ARM UNLESS THE USE A FULL LENGTH SPLINT AND SECURE THE ARM TO THE BODY.