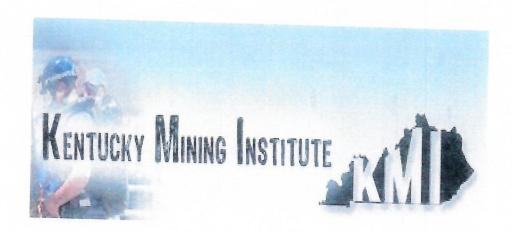


2023 KMI

FIRST AID CONTEST

PRESENTED BY
DIVISON OF MINE SAFETY



August 14th
Lexington, KY

First Aid Problem

You are at the surface area of the Big Blue #12 mine. Tim and Hack are beginning repairs on a substation. Tim ask Hack to lock out the circuit that they will be working on while doing so Hack stops to talk to Bert who is getting ready to start repairs on another circuit the two lock out the circuits and Hack radioed Tim to let him know that it's safe to start repairs. As he walked away, Bert yells at Hack to let him know he had locked out the wrong circuit. Just then, he heard a loud pop and Tim yell for help when he gets to Tim he finds him on the ground about 20ft from the sub area in a pile of rock and metal. The sub is on fire, Tim's arms and hands are smoking Hack puts the fire out, and tries to help Tim. He is unable to do so and calls for your team to help. Hack may be able to help if he can get calmed down. Power is still on the sub you. Someone will need call someone in maintenance to have the power removed! Please make sure you get confirmation that the power has been removed. EMS has been notified but will be delayed you will be notified as soon as they arrive.

Tim PARTIAL BURN TO LEFT EAR PARIT AL BURN TO RIGHT FOREARM PARTIAL BURN TO LEFT FOREARM FULL THICKNESS BURN TO LEFT HAND FULL THICKNESS 7 INCH BURN TO RIGHT LACERATION LEFT HAND THIGH

2023 KMI First Aid Problem

NOTE: Each critical skill identified with an asterisk () shall be clearly verbalized by the team as it is being conducted at contest <u>not</u> utilizing moulage. Each critical skill identified with a double asterisk (**) shall be clearly verbalized by the team as it is being conducted at all contests.

After initially stating what BP-DOC- Bleeding, Pain, Deformities, Open wounds, and Crepitus stands for, the team may simply state BP-DOC- Bleeding, Pain, Deformities, Open wounds when making their checks. Teams my use the acronym "CSM" when checking circulation, sensation, and motor function.

INITIAL ASSESSMENT CRITICAL SKILLS

	CRITICAL SKILLS
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 lifethreatening injuries/conditions (Rule 2).

<u>IMMEDIATE</u>: 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**.

<u>DELAYED:</u> 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

PROCEDURES

PATIENT ASSESSMENT

00	PROCEDURES		-	1	CRITICAL SKILLS		
				**A	. Check head for BP-DOC: Bleeding, Pain, Deformities,		
					Open wounds, Crepitus		
				**B.	Check and touch the scalp		
					Check the face		
	1. HEAD				Check the ears for bleeding or clear fluids		
	1.111.110			E.	Check the eyes for any discoloration, unequal pupils,		
				**[reaction to light, foreign objects and bleeding		
				**G	Check the nose for any bleeding or drainage Check the mouth for loose or broken teeth,		
				1	foreign		
					objects, swelling or injury of tongue, unusual breath		
					odor and discoloration		
	2. NECK		0	**A.	Check the neck BP DOC		
					Inspect for medical ID		
				**A.	Check chest area for BP DOC		
	3. CHEST	3. CHEST		**B.	Feel chest for equal breathing movement on both sides		
				**C.	Feel chest for inward movement in the rib areas		
			***************************************	-	during inhalations		
	4. ABDOMEN				Check abdomen (stomach) for BP-DOC		
		5. PELVIS		**A.	Check pelvis for BP DOC		
	5. PELVIS			**B.	Inspect pelvis for injury by touch (Visually inspect and		
		-			verbally state inspection of crotch and buttocks areas)		
		L	R	+ A			
				В.	Check each leg for BP DOC		
				1	Inspect legs for injury by touch		
	6. LEGS				Unresponsive: Check legs for paralysis (pinch inner side of leg on calf)		
		0	П-	**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				
				**A.	extern drift for bridge		
				В.	Inspect arms for injury by touch		
				C.	Unresponsive: Check arms for paralysis (pinch inner		
	7. ARMS			***	side of wrist)		
-				D.	Responsive: Check arms for motion (in a conscious		
					patient; team places fingers in each hand of patient		
			×	**E.	and states "Can you squeeze my fingers?" Check for medical ID bracelet		
				L.	Check for medical ID bracelet		

BURNS

PROCEDURES	CRITICAL SKILLS	
1. DETERMINE BURN TYPE	**A. Determine type Thermal Chemical Electrical	
2. DETERMINE BODY SURFACE AREA	**A. Determine Body Surface Area (BSA) using rule of nines	
3. BURN CARE (All Types)	*A. Remove patient from source of burn and prevent further contamination **B. Consider the type of burn and stopping the burning process initially with water or saline. C. Do not flush with water unless they involve an area less than 9% of the total body surface area) D. Remove smoldering clothing (do not remove any clothing that is melted onto the skin) jewelry **E. Continually monitor the airway for evidence of closure F. Prevent further contamination. Keep the burned area clean by covering it with a dressing. Cover partial- and full-thickness burns with dry clean dressings. In most cases place dry, sterile dressings onto the burned area. **G. Do not use any type of ointment, lotion or antisep **H. Do not break blisters **II. Ensure patient does not get hypothermic J. If eyes or eyelids have been burned, placedressing or pads over them. Moisten these pads with sterile water if possible. Both eyes will be covered. K. If serious burn (partial or full-thickness burns) involves the hands or feet, always place a clean pabetween toes or fingers when completing the dressing.	gs

	A. Protect yourself from exposure to hazardous materials
4. CARE FOR CHEMICAL	B. Wear gloves, eye protection, and respiratory protection
BURNS	**C. Flush the burned area for at least 20 minutes. (If possible and it can be done quickly, try to identify
	any chemical powders before applying water) D. Apply a dry clean drossing
	- 11ppry a dry, creati dressing.
	E. If dry lime is the agent causing the burn, do not flush with water. Instead use a dry dressing to brush the substance off the patient's skin, hair, and clothing.
	F. Remove any contaminated clothing or jewelry.
	G. Once this is done, you may flush the area with water.
	H. Use caution not to contaminate uninjured areas when flushing or brushing
5. CARE FOR ELECTRICAL BURNS	**A. Ensure safety before removing patient from the electrical source
	**B. If the patient is still in contact with the electrical source or you are unsure, do not approach or touch
	the patient, contact power company
	**C. Monitor the patient closely for respiratory and cardiac arrest
	D. Treat the soft tissue injuries associated with the burn
	**E. Look for both an entrance and exit wound
6. REASSESS	**A. Reassess level of consciousness (AVPU), respiratory status, and patient response

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

DRESSINGS AND BANDAGING - OPEN WOUNDS

PROCEDURES	CRITICAL SKILLS
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. Cover all edges of dressing. D. Do not cover tips of fingers and toes, unless they are injured. E. Bandage from the bottom of the limb to the top (distal to proximal) if applicable.

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

Impaled Objects

- *1. Do not remove
- 2. Expose wound
- 3. Control bleeding
- 4. Stabilize with a bulky dressing; criss-cross the layers
- 5. Tie 4in. wide cravats around to hold in place, or tape in place
- *6. Check for exit wound (treat when found)
- 7. Immobilize affected area

Impaled Objects in the Jaw

- *1. Examine; inside & outside
- 2. If end not impaled in mouth pull it out
- 3. Position head for drainage: if spinal injury, immobilize 1st and tilt board
- 4. Dress outside of wound
- **5. Gauze on inside only if patient alert, (Simulate only in contest and state, "I would leave 3-4 inches of gauze outside of mouth.")

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

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

Gloves

PROCEDURES		CRITICAL SKILLS
1. RESCUER ESTABLISH UNRESPONSIVENESS	0 0 0 0	 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 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 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 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 DELIVER CARDIAC COMPRESSION		 A. Give 30 compressions B. Compressions are at the rate of 100 to 120 per minute C. Down stroke for compression must be on orthrough compression line D. Return to baseline on upstroke of compression
6. RESCUER ESTABLISH AIRWAY	. G . D	A. Kneel at the patient's side near the head B. Correctly execute head-tilt/chin-lift maneuver

	-		
7. RESCUER VENTILATIONS BETWEEN COMPRESSIONS	0 0 0	A. B. C.	Place barrier device (pocket mask/shield with one way valve) on manikin Give 2 breaths 1 second each Each breath - minimum of .8 (through .7 liter line on new manikins) 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. B. C. D. F.	Provide 5 cycles of 30 chest compressions and 2 rescue breaths To check for pulse, stop chest compressions for no more than 10 seconds after the first set of CPR Rescuer at patient's head maintains airway and checks for adequate breathing or coughing The rescuer at the patient's head shall feel for a carotid pulse If no signs of circulation are detected, continue chest compressions and breaths and check for signs of circulation after each set 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. RESCUER APPLIES THE AED (DURING THE FIFTH CYCLE OF COMPRESSIONS)		А. В.	Rescuer continues compressions while other rescuer turns (simulated) on AED and applies pads. RESCUERS SWITCH rescuer clears victim, allowing AED to analyze. (Judges shall provide an envelope indicating a shockable or non-shockable rhythm) If AED indicates a shockable rhythm, rescuer clears victim again and delivers shock. *verbalize shock given
10. RESUME HIGH QUALITY CPR		A. B.	Rescuer gives 30 compressions immediately after shock delivery (2 cycles). Other rescuer successfully delivers 2 breaths.
11. CHANGING RESCUERS		Α.	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. **B.	After providing required CPR (outlined in problem), check for return of pulse (within 10 seconds) "Ask judge for presence of a pulse."

MOUTH-TO-MASK RESUSCITATION

PROCEDURES CRITICAL SKILLS

PROCEDURES		CRITICAL SKILLS
1. ESTABLISH UNRESPONSIVENESS		 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		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	0 0	 A. Correctly locate the carotid pulse (on the side of the rescuer) B. Check for presence of carotid pulse for 5 to 10 second. **C. Presence of pulse
4. ESTABLISH AIRWAY		A. Correctly execute head tilt / chin lift or jaw thrust maneuver depending on the presence of cervical spine (neck) injuries
5. VENTILATE PATIENT		 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		A. After providing the required number of breaths (outlined in problem), check for return ofbreathing and carotid pulse within 10 seconds **B. "Patient is breathing and has a pulse"

TWO-PERSON LOG ROLL

PROCEDURES CRITICAL SKILLS

1. STABILIZE HEAD	Ą	*A. Stabilize the head and neck
2. PREPARING THE PATIENT		 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		A. Grasp the patient at the shoulder and pelvisarea B. Give instructions to bystander, if used to support
4. ROLLING THE PATIENT		 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

THREE-PERSON LOG ROLL

PROCEDURES	-	CRITICAL SKILLS
1. STABILIZE HEAD		*A. Stabilize the head and neck B. One rescuer should kneel at the top of the patient's head and hold or stabilize the head and neck in position found.
2. PREPARING THE PATIENT		 A. A second rescuer should kneel at the patient's side opposite the direction the face is facing. B. When placing patient on board place board parallel to the patient. C. Quickly assess the patient's arms to ensure no obvious injuries. D. 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. E. The third rescuer should kneel at the patient's hips.
3. PREPARING THE RESCUER		A. Rescuers should grasp the patient at the shoulders, hips, knees, and ankles.B. Give instructions to bystander (physically show), if used to support
4. ROLLING THE PATIENT		 A. While stabilizing the head, the rescuer at the patient's head should signal and give directions, all rescuers should slowly roll the patient toward the rescuers in a coordinated move, keeping the spine in a neutral, inline position. B. On three, slowly roll. One, two, three roll together. C. The head and neck should remain on the same plane as the torso, the rescuer holding the head should not initially try to turn the head with the body. (if the head is already facing sideways, allow the body to come into alignment with the head) D. Maintain stability by holding patient with one hand and placing board (if used) with other E. Roll the body as a unit onto the board (if used) (board may be slanted or flat) Center the patient on the board. F. Place the arm alongside the body

IMMOBILIZATION - LONG SPINE BOARD (Backboard)

PROCEDURES		CRITICAL SKILLS
	- 0	A. Rescuer One at the head must maintain in- line immobilization of the head and spine
1. MOVE THE PATIENT ONTO THE LONG		B. Rescuer One at the head directs the movement of the patient
SPINE BOARD		C. Other Rescuers control movement of the rest of body
	D	D. Rescuer Two position themselves on same side
		E. Upon command of Rescuer One at the head, roll patient onto side toward Rescuer Two.
		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 Rescuer 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	<u>u</u>	A. Select and use appropriate padding
PATIENT AND LONG		B. Place padding as needed under the head
SPINE BOARD		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		A. Using head set or place rolled towels on each
TO THE LONG SPINE BOARD		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 SKILLS
1. CHECK FOR SIGNS AND SYMPTOMS OF SHOCK	**A. Check restlessness; anxiety; altered mental status; increased heart rate; normal to slightly low blood pressure; mildly increased breathing rate; pale (or bluish) skin (in victim with dark skin examine inside of mouth and nailbeds for bluish coloration. **B. Check for cool, moist skin; sluggish pupils; and nausea and vomiting. **C. Check for weakness
2. TREATMENT	A. Ensure the ABCs are properly supported. B. Control external bleeding. C. Keep the patient in a supine position. **D. Calm and reassure the patient, and maintain a normal body temperature. E. 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) F. Continue to monitor and support ABCs G. Do not give the patient anything by mouth. Do not give any fluids or food and be alert for vomiting. **H. Monitor the patient's ABCs at least every five
	minutes. **I. Reassure and calm the patient