Novi CERT Supplemental Training

Medical Review

Objectives

- At the end of this review the participants will be able to:
- 1. Identify life-threatening conditions resulting from trauma such as severe bleeding, hypothermia and airway obstruction.
 - 2. Identify basic first aid care for non-fatal injuries
- 3. Identify elements of the head to toe assessment

Treating Life-Threatening Conditions

Without treatment, severe bleeding and airway obstruction can quickly lead to DEATH.

The first priority of CERT volunteers in assisting in disaster medical operations is to attend to these conditions by controlling bleeding and positioning a patient so they can breathe.

Safety Considerations

- PRIOR to treatment ensure that both the patient and the rescuer are in a SAFE environment to administer care. ALWAYS wear PPE.
- The CERT volunteer must take these things into consideration:
 - 1. Do I feel safe in this spot?
 - 2. Should I leave and move to a safer location, or am I able to stay and start providing care immediately?
 - 3. If I leave, can I take anyone with me?

Approaching the Patient



The 3 Killers

Airway obstruction



Excessive bleeding



Shock



Airway Obstruction: Positioning the Patient and Opening the Airway

- The conscious patient will naturally assume the optimal position for breathing given their injuries. Let them self position but may assist as needed.
- The unconscious patient may be turned on their side which allows the chest to expand and fluids to drain away from the airway when head is slightly tilted back. (RECOVERY POSITION)
- The tongue is the most common obstruction
- Head tilt/Chin lift or Jaw-thrust Maneuver









Controlling Bleeding

•A blood loss of half the blood volume can result in irreversible shock. (2.5 L)

•Examples of life-threatening bleeding:

 Spurting/steady bleeding (arterial/venous)

 Blood is pooling and/or soaking through overlying clothes/bandages

Amputation

Stage	Blood Loss	Heart Rate	Blood Pressure	Respiratory Rate	Patient
I	<15%	Normal (<100bpm)	Normal	14-20	Patient appears normal
II	15%-30%	Fast (>100bpm)	Slightly low	20-30	Patient may feel anxious
III	30%-40%	Very Fast (>120bpm)	Low	30-40	Patient feels confused
IV	>40%	Critical (>140bpm)	Critical	>35	Patient feels lethargic or may be unconscious

Types of Bleeding



Direct Pressure, Elevation and Pressure Points

- Direct Pressure: Pressure directly on the wound may take several minutes to stop
- **Elevation**: Elevate the site above the heart if possible
- Pressure Points: Pressure on the artery above the injury to stop arterial flow to the wound.
 - * Brachial Artery *Femoral Artery

*Popliteal Artery



NO!





Tourniquet

If unable to stop bleeding by direct pressure, AND EMS is delayed a tourniquet may be a viable option to save someone from bleeding to death.

A commercial tourniquet is best (C.A.T.)

Place tourniquet as high as possible on the injured limb closest to the torso

Pull the strap through the buckle

Twist the windlass tightly until bleeding stops/slows – painful!

If bleeding doesn't stop may place second one adjacent to the first.



SHOCK

- Recognizing shock: often difficult to diagnose
- Body initially compensates for blood loss and will mask symptoms of shock.
- Main signs of shock:

- Rapid and shallow breathing >30bpm
- Capillary refill >2 seconds



- Cap refill not valid in kids use mental status- can also use presence/absence of radial pulse as alternative
- Failure to follow simple commands

Shock-Maintaining Body Temperature

- People with serious injuries are more susceptible to hypothermia which can worsen shock.
- Keep the patient warm:

remove wet clothing



- place something between the patient and the ground
- wrap the person with dry layers (blanket, coat, mylar blanket)
- shield the patient from the wind

Evaluating a Victim During Triage

- Airway/breathing making contact, talk loudly.
- If no response open airway/look, listen, feel => evaluate
- respiratory rate (RR) If RR >30 (indicates shock) continue on to assess circulation (bleeding).
- <u>Control severe bleeding-</u>direct pressure, elevation etc.
- Capillary refill/radial pulse:
- >2 sec = SHOCK
- <2 sec OR radial pulse present then check mental status.
- Mental Status: No response or confusion = (indicates shock)

Wound Care

- Control bleeding direct pressure, elevation, pressure points...
- Clean the wound-irrigate with clean room temp water
- NO HYDROGEN PEROXIDE

- Dressing and bandage DRESS wound with 4X4, trauma dressing, BANDAGE wound with rolled gauze, ace wrap etc
- If bandage is blood soaked-apply more dressing/bandaging over existing bandage. Do not remove original bandaging to check bleeding.
- REASSESS wound in 4-6 hrs or sooner now may remove dressing –flush the wound, look for signs of infection-swelling, discharge, discoloration, red stripes etc.



Amputations

Control bleeding

- Treat for shock
- Keep body part wrapped in clean material in plastic bag.
- Label with time, date, name of victim
- Keep it cool and with victim



Impaled Objects

Immobilize the body part

- Do not remove object unless it is obstructing the airway
- Try to control bleeding at the site, clean and dress the wound
- Stabilize the object







Burns

• <u>SIZE UP!!!!!</u>

- What caused the burn?
- Is the danger still present?
- When did the burning cease?

Burns

- Objectives in treating burns:
- Prevent hypothermia
- Manage pain

Reduce the risk of infection



Burns

Cool the area

 Cover with sterile cloth/dressing – may immerse in cool water for

1 minute.

Cover loosely with dry sterile bandage

No ice or ointments



CAUTION: If the patient appears to have burns but no obvious cause for the burn use extreme caution: this could indicate a chemical burn which is a risk to the rescuer

Fractures

Open vs Closed Fracture

Displaced vs Nondisplaced Fracture







Dislocations

- Dislocation: injury to the ligaments around a joint so severe that it allows separation of the bone from its normal position
- Signs are similar to signs of a fracture and often see deformity
- Do not try to realign the joint, immobilize in place.

Sprains and Strains

- Involves stretching or tearing of ligaments around a joint beyond their normal limits.
- Sprain is considered a partial dislocation
- Common signs:
- Tenderness at the site
- Swelling and/or bruising
- Restricted use or loss of use

Treating Fractures, Dislocations, Sprains and Strains

Objective in treating these injuries: IMMOBILIZE THE INJURY AND JOINTS ABOVE AND BELOW THE INJURY

Difficult to distinguish between fracture, sprain or strain so....

When in doubt treat as a fracture.

Treating an Open Fracture

- Don't realign the limb. Do not draw exposed bone ends back into the tissue. HIGH risk of infection!
- Don't irrigate the wound
- DO: cover wound with sterile dressing
- DO: splint without disturbing the wound. Splint in place!
- DO: place a moist 4X4 inch dressing over the bone ends

Splinting

- Principles of splinting:
- Immobilize the injury by supporting the area and immobilizing the joints above and below.
- Assess PMS pulse, movement and sensation before and after splinting
- Splint in place, do not realign. Do not reduce an open fracture.

Splinting Material

- Soft materials- towels, pillows, blankets tied with soft ties
- Rigid materials- boards, metal strips, magazines or newspapers etc.
- Anatomical splint
- Be creative by using what's available if necessary
- Use soft material to fill in gaps to add support to the injured area





Cold Related Injuries

- Hypothermia: body temperature <95 degrees
 F (37 degrees C)
- Frostbite: this occurs
 when extreme cold shuts
 down blood flow to
 extremities which causes
 tissue death

Hypothermia

- Body temp <95 degrees F (35 degrees C)
- Redness or blueness of skin
- Numbness often see shivering as well
- Later stages will see:
- slurred speech
- unpredictable behavior
- listlessness

Hypothermia Treatment

Remove wet clothing

- Place something between patient and the ground
- Wrap patient in dry layers coat, blanket, mylar blanket etc
- Shield patient from the wind
- Place unconscious patient in recovery position
- Do not massage affected body parts

Frostbite

- Blood vessels naturally constrict in cold weather which shunts blood from extremities to the core organs. Tissue can freeze where blood flow is diminished
- Frostbite is most common in the nose, ears, hands and feet
- Signs:
- Skin discoloration (red, white, purple, black)
- Burning or tingling may not be localized to the injury site
- Partial or complete numbness

Frostbite Treatment

SLOWLY warm the patient

Warming an affected area too quickly can be damaging and very painful.

Immerse the injured area in warm (NOT HOT) water (107.6 degrees F)

Do NOT allow body part to re-freeze – will exacerbate injury

Do NOT massage the area – tissue damage

Heat Cramps and Heat Exhaustion

Heat Cramps – muscle cramps due to over exertion in extreme heat

Heat Exhaustion-

- Often due to working or exercising in extreme heat
- Loss of body fluids through heavy sweating
- Blood flow to skin increases (in an effort to cool the body), causing blood flow to decrease to vital organs resulting in a mild form of shock.
- Signs:
- Cool, moist, pale or flushed skin
- Heavy sweating
- Dizziness

Headache

Nausea/vomiting

Heat Stroke

- Life-threatening
- Patient's ability to control body temperature fails
- Body temperature rises too high (may be 105 F or greater)
 – may result in brain damage or death
- Signs:

- Hot, red skin
- No sweating
- Changes in consciousness
- Rapid, weak pulse and rapid, shallow breathing

Heat Stroke Treatment

- Get patient to a cool environment
- Cool the body slowly with chilled, wet towels, cool bath
- Patient may SLOWLY drink water every 15 minutes.
 Too much too fast may cause vomiting.
- If patient is vomiting, cramping or losing consciousness:
- Do NOT give food and extreme caution with water, watch patient closely.

Head to Toe Assessment

- Objectives of Head to Toe Assessment
- Determine extent of injuries
- Determine what type of treatment in needed
- Document the patient's injuries
- ALWAYS WEAR PPE!

Head to Toe Assessment

- If patient is conscious ALWAYS ask permission to treat
- Talk to the patient can help reduce anxiety
- Do the assessment the same way EVERY time
- Pay careful attention
- Look, listen and feel for anything unusual
- Check your own hands for blood



Head to Toe Assessment

- Head
- Neck
- Shoulders
- Chest
- Arms
- Abdomen
- Pelvis
- Legs

Head to Toe Assessment

- Looking for: DCAPS-BTLS
- DEFORMITY BURNS
- CONTUSIONS TENDERNESS
- ABRASIONS
 LACERATIONS
- PUNCTURES SWELLING

 ALWAYS CHECKING FOR: PULSE, MOVEMENT, SENSATION

Closed-Head, Neck and Spinal Injuries

- Closed Head Injury (Traumatic Brain Injury) is a concussion type injury (not an open wound type).
- If this is suspected minimize movement of the head and spine while treating lifethreatening injuries

Closed – Head, Neck and Spinal Injuries

Signs of a closed-head, neck or spinal injury:

• change in consciousness

- inability to move a body part
- severe pain or pressure in head, neck or back
- tingling or numbress is extremities
- difficulty breathing or seeing
- heavy bleeding, bruising or deformity of the head or spine

blood or fluid in the ears or nose

bruising behind the ear

bruising around the eyes (raccoon eyes)

uneven pupils

seizures

nausea/vomiting

Stabilizing the Head

- Will likely need to be creative for splinting/backboard material
- Backboard door, building materials etc
- Items to help stabilize the head- towels, blankets, drapes
- Only move a patient to increase the safety of the patient and the rescuer, or when professional help is delayed AND a medical treatment area is established to care for multiple patients



Review

- Safety Considerations
- 3 Killers: Airway Obstruction, Excessive Bleeding, Shock
- Treating the 3 Killers
- Evaluating a patient during triage
- Types of wounds and their care
- Burns
- Sprains, strains, dislocations and fractures
- Heat and cold related injuries
- Splinting and bandaging
- Head to toe assessment
- Closed-head, neck and spinal injuries

