Disaster Medical Operations
— Part 2

CERT Basic Training
Unit 4
Spring 2018

Unit 3 Review

- RPM, 30-2-Can Do
- 3 “Killers”
  - Airway obstruction
  - Excessive Bleeding
  - Shock (Circulatory)

Review - CERT Sizeup

1. Gather Facts
2. Assess Damage
3. Consider Probabilities
4. Assess Your Situation
5. Establish Priorities
6. Make Decisions
7. Develop Plan of Action
8. Take Action
9. Evaluate Progress

REMEMBER: CERT SIZEUP IS A CONTINUOUS PROCESS
In this unit you will learn about

- **Public Health Considerations:** How to maintain hygiene and sanitation
- **Functions of Disaster Medical Operations:** What the 5 major functions of disaster medical operations are and how they are set up.
- **Victim Evaluation:** How to perform a head-to-toe assessment to identify and treat injuries

---

**In this unit you will learn about**

**Basic Treatment – How to:**
- Treat Burns
- Dress and bandage wounds
- Treat fractures, dislocations, sprains, & strains
- Treat hypothermia (cold-related injuries)
- Treat heat-related injuries
- Control nasal bleeding
- Treat bites and stings

---

**STAY SAFE - WEAR YOUR PPE!**

When participating in MED OPS, you **MUST** protect yourself, your team and your victim at the same time
Public Health Considerations

Maintaining
- Proper hygiene
- Proper sanitation
- Drinkable water
- Health by preventing spread of disease

Maintaining Hygiene
- Wear your PPE
- Wash hands and change exam gloves between victims
- Wash hands frequently ("row, row, row…")
  - Soap & water or unexpired hand sanitizer
- Keep dressings sterile and change dressings as needed to keep clean
- Avoid contact with body fluids
  - "If it is wet and not yours, don't touch it!"

Maintain Sanitation
- What is Medical Waste?
  - Contaminated with body fluids
- Control disposal/Transport/Storage of biohazardous waste
  - Put medical waste in red plastic bags
  - Tie off bags
  - Mark as medical waste
  - When is it OK to leave on site?
- Bury human waste - Mark the spot
**Disinfection of drinking water**

- Boil for 1 minute – rolling boil
- Water purification tablets
- Bleach
  - No soaps or scents in bleach
  - Use 8 drops of bleach per gallon of clear water
  - Use 16 drops of bleach per gallon of cloudy water
  - Let solution stand for 30 minutes before use

For more information search online for: "making water safe" disinfectants cdc.gov

---

**Functions of Disaster Medical Operations**

- Triage
- Treatment
- Transport
- Morgue
- Supply

---

**Most Effective Use of CERT Resources**

To help meet the challenge of limited resources, CERT may need to establish:

- Decentralized medical treatment location (more than one location)
- Centralized medical treatment location (one location)
Establish a Medical Treatment Area

- Select site and set up treatment area as soon as injured victims are confirmed
- When determining best location(s) for treatment area, consider:
  - Safety of rescuers and victims
  - Most effective use of resources

Treatment Area Site Selection

The site selected should be:
- In a safe area, free of hazards and debris
- Upwind, uphill, and upstream (if possible) from hazard zone(s)
- Accessible by transportation vehicles
- Expandable

Treatment Area Layout

Four treatment areas:
- “I” for immediate care
- “D” for delayed care
- “M” for minor injuries "walking wounded"
- “DEAD” for the morgue
Treatment Area Layout

- Incident Site
- Triage
- Treatment Area
- Immediate
- Delayed
- Move
- Morgue

Treatment area layout, showing the organization for the incident site, triage, transportation, and morgue.

Treatment Area Organization

- Assign treatment leader to each treatment area
- Document thoroughly
  - Available identifying information
  - Description (age, sex, body build, estimated height)
  - Clothing
  - Injuries
  - Treatment
  - Transfer location

WC CERT – DOCUMENTATION

BECOME FAMILIAR WITH THESE FORMS
YOU HAVE A COPY IN YOUR BINDERS
WC CERT – Medical (Volunteer) Intake Form

WC CERT MED OPS Intake Log

Name and initials of CERT volunteers working in Medical Operations

Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________
Name: __________________________ Initials: __________________________

If you volunteer in Med Ops you need to sign in on this form before you start seeing patients. You will be filling out a set of forms and this sheet matches your initials with your name, so case any questions arise about any of your documentation.

Medical Intake Form (Victims)

Medical Intake Form (Victims)

Head-to-Toe Assessment (HTTA)

- Objectives of head-to-toe assessment:
  - Determine extent of injuries
  - Document injuries
  - Determine type of treatment needed
Order of Head to Toe Assessment

1. RPM – treat the 3 killers immediately
2. Head
3. Neck
4. Shoulders
5. Chest/Back
6. Arms
7. Abdomen
8. Pelvis
9. Legs

Scribe/FOG can help you remember what to do

What to Look for: DCAP-BTLS

- Deformities
- Contusions
- Abrasions
- Punctures
- Burns
- Tenderness
- Lacerations
- Swelling

Conducting Head-to-Toe Assessment

- Talk to victim, ask about pain (scale: 0-10)
- Pay careful attention
- Identify self
- Respect privacy
- Look for medical identification!!!
- Look, listen, and feel
- Check own hands for victim bleeding
- Check color, feeling, warmth in all extremities
- If you suspect a spinal injury in unconscious victims, treat accordingly
Closed-Head, Neck, Spinal Injuries

- **DO NO HARM**
- Suspect head/neck/spine injury if
  - Unconscious or altered mental status
  - Severe pain directly over the spine
  - High impact, fall or impact/blow close to head
  - See FEMA manual Unit 4 DMO part 2 for other signs
- Move victim only if needed
  - Minimize movement of head and neck
  - Allow position of comfort if victim fully awake
  - Work with partner to maintain head and neck alignment, keep spine in straight line

MED OPS DOCUMENTATION FORM
Used to document individual victim's status

DOCUMENTATION – Don’t forget...

- Write legibly – use print not script
- Use black or blue ink only
- Press hard
- Don’t make up abbreviations
- Don’t leave blank rows
  - NVI = "no visible injury"
- Make sure you signed the Med Ops Intake sign-in sheet
- De-glove properly before touching pen and clipboard
Head to Toe Assessment - HTTA

- During Search & Rescue – RPM not HTTA
  - Treat for 3 killers and tag everyone
  - Light damage: assess in place
  - Moderate damage: move to treatment area first

- TRANSPORT & MED OPS – RPM & HTTA

- Let’s break into groups and practice – and document
  http://bit.ly/1N4uCXu

Basic First Aid Overview

- Treat Burns
- Dress and bandage wounds
- Treat fractures, dislocations, sprains, strains
- Treat hypothermia and frostbite
- Treat heat-related injuries
- Control nasal bleeding
- Treat insect bites and stings
BURNS

• Heat
• Chemicals
• Electricity
• Radiation

As with all First Aid - WEAR YOUR PPE

WHAT CAUSED THE BURN

Burns caused by electricity, chemicals, nuclear radiation or an explosion are considered critical burns.

BURN SEVERITY

• A burn that covers more than 1 part of the body or covers a large percentage of the person’s total body area
• Burns that cover a person’s head, neck, hands, feet or groin
• If the person is younger than 5 years or older than 60 years (unless it is very minor)

ARE CONSIDERED CRITICAL

Hypothermia is a risk if burn area is large
HOW DEEP IS THE BURN?

Burns can affect
- Only the top layer of skin red, nonblistered (sunburn)
- Or, they can extend into deeper layers of the skin - red, blisters, swelling
- Or, they can go into the fat, muscle or bone - white, leathery, dark brown, charred, may not be painful

The deeper the burn, the greater the severity

BURNS - TREATMENT

To care for any type of burn remember 3 simple steps

STOP
COOL
COVER

BURNS - TREATMENT

After sizing up the scene

STOP
the burning by eliminating the cause of the burn if it is safe to do so.
Next

**COOL**
the burn with cool or
cold clean running water
(if possible)
for at least 10 minutes

Finally

**COVER**
the burn
loosely with a dry sterile dressing
If fingers involved, place gauze
between the fingers

Treatment for Chemical Burns

- Remove cause of burn + affected clothing/jewelry
- If irritant is dry, gently brush away as much as possible
  - Always brush away from eyes, victim, and you
- Flush with lots of cool running water
- Apply cool, wet compress to relieve pain
- Cover wound loosely with dry, sterile or clean dressing
- Treat for shock if appropriate
**BURNS - Inhalation Burns Signs & Symptoms**

- Sudden loss of consciousness
- Evidence of respiratory distress or upper airway obstruction
- Soot around mouth or nose
- Singed facial hair
- Burns around face or neck

**BURNS - Treatment DON'Ts**

- When treating a burn victim, **DO NOT**:
  - Use ice
  - Apply antiseptics, ointments, or other remedies
  - Remove shreds of tissue, break blisters, or remove adhered particles of clothing

**WOUND CARE – CAUTION: GRAPHIC PHOTOS**

**CAUTION – Wound photos are not easy to look at.**

- Control bleeding
- Clean wound
- Apply dressing and bandage
Cleaning and Bandaging

- Clean by irrigating with clean, room temperature water
  - NEVER use hydrogen peroxide
  - Irrigate but do not scrub
- Apply dressing and bandage
  - Assess CFW prior to bandaging
  - Dressing applied directly to wound – do not drag dressing from across nearby (contaminated) skin
  - Bandage holds dressing in place
  - Reassess CFW after bandaging
Cleaning and Bandaging Wounds

- If active bleeding:
  - Redress OVER existing dressing

- If no active bleeding:
  - Remove bandage and dressing to flush wound
  - Check for infection every 4-6 hours if possible

WOUND CARE - Signs of Infection

Signs of infection
- Pain
- Swelling
- Warm/Hot to touch
- Redness around wound site
- Discharge from wound
- Red striations from wound site
- Fever

AMPUTATIONS

- Control bleeding; prevent shock!
- If amputated body part is found:
  - Save tissue parts
    - wrap in clean damp material and place in plastic bag
    - label bag with victim name!
  - Keep bagged tissue parts cool (ice water OK), but NOT directly on ice
  - Keep severed part with victim
IMPALED OBJECTS

When foreign object is impaled in victim’s body:
- Do not attempt to move or remove!
- Immobilize affected body part
- Try to control bleeding
- Stabilize impaled object during bandaging

INJURIES TO BONES, MUSCLES, AND JOINTS

- Check color, feeling, warmth (CFW) below injury before and after treatment
- Immobilize areas immediately above and below injury site
  - Joint above and joint below a fracture
  - Bones above and bones below a joint injury
- If uncertain about injury severity, treat as fracture
- Rest Ice Compression Elevation

Types of Fractures

- Closed Fracture: Bony injury without skin disruption
- Open Fracture: Bony injury with skin disruption

Rest Ice Compression Elevation
Displaced and Nondisplaced Fractures

Treating Open Fractures
- Do not draw exposed bone ends back into tissue
- Do not irrigate wound
- Cover wound with sterile dressing
- Splint fracture without disturbing wound
- Place moist dressing over bone end
- Check CFW before and after splinting/immobilization

Dislocations
- Dislocation is injury to ligaments around joint
  - So severe that it permits separation of bone from its normal position in joint
- Treatment
  - Immobilize; do NOT relocate
  - Check CFW before and after splinting/immobilization
Signs of Sprain

- Tenderness at site
- Swelling and bruising
- Restricted use or loss of use
- **Rest Ice Compression**

Splinting – Types of Splints

**Anatomical**
Body part to body part

**Soft**
- Pillows, towels, socks, stuffed toys

**Rigid**
- Cardboard, sticks

Splinting guidelines

- Splint before moving the victim
- Check CFW below injury before splinting
- Don’t use injured part as the template
- Splint in the position you find it/position of comfort
  - *Don’t try to realign bones or joints*
- Remove jewelry (if possible. Bag/tag)
- Support & immobilize areas above & below injury
- Fill voids to stabilize & provide comfort
- Reassess CFW after splinting
HOW TO SLING

- Place it lengthwise against the person's body.
- Side closest to body goes over uninjured side.
- Point of the bandage is towards elbow of injured arm.
- Splint in position you find arm.
- Fill in "voids" for support.
- Tie the hanging end of the bandage to the top end by looping it behind the person's neck — tie on the side of neck on uninjured side.
- The injured arm should be comfortably supported in the sling.
- Pin, tape or knot the "point" to prevent the arm from slipping out the back/elbow side of the sling.

Cold-Related Injuries

- Hypothermia:
  - Occurs when body's temperature drops below normal.
- Frostbite:
  - Occurs when extreme cold shuts down blood flow to extremities, causing tissue death.
Symptoms of Hypothermia

- Body temperature of 95°F or lower
- Redness or blueness of skin
- Numbness and shivering
- Slurred speech
- Unpredictable behavior
- Listlessness

Hypothermia Treatment

- Remove wet clothing
- Wrap victim in blanket/cover head
- Protect victim from weather
- Provide food and drink to conscious victims
- Do not attempt to massage to warm body
- Place victim in warm bath
- Place unconscious victim in recovery position

Symptoms of Frostbite

- Skin discoloration
- Burning or tingling sensation
- Partial or complete numbness
Frostbite Treatment

- Treat hypothermia
- Immerse injured area in warm (NOT hot) water - thawing complete when tissue soft, red/purple
  - Warm slowly
- Do NOT allow part to re-freeze
- Do NOT attempt to use massage
- Wrap affected body parts in dry, sterile dressing

Heat-Related Injuries

Heat cramps:
- Muscle spasms brought on by over-exertion in extreme heat

Heat exhaustion:
- Exercising/working in extreme heat results in loss of body fluids

Heat stroke:
- Temp control system shuts down
- Body temp rises so high that brain damage & death may result

Symptoms of Heat Exhaustion

- Cool, moist, pale or flushed skin
- Heavy sweating
- Headache
- Nausea or vomiting
- Dizziness
- Exhaustion
- NOT CONFUSED
Symptoms of Heat Stroke

- Hot, red skin
- Lack of perspiration
- **CHANGES IN CONSCIOUSNESS**
- Rapid, weak pulse and rapid, shallow breathing

Treatment of severe heat injury

- Remove from heat to cool environment
- Cool body – *immediate evaporative cooling* if heat stroke suspected – before transport
- Sports drink (not salt tablets) or water – slowly enough to avoid vomiting
- No food or drink if victim is experiencing vomiting, abdominal cramping, or is losing consciousness

Nosebleed

- **Causes**
  - Blunt force to nose
  - Skull fracture
  - Nontrauma conditions, e.g., sinus infections, high blood pressure, and bleeding disorders
- **Cautions**
  - Large blood loss from nosebleed can lead to shock
  - Actual blood loss may not be evident because victim will swallow some amount of blood
Nosebleed

- Control nasal bleeding:
  - Pinch nostrils firmly
  - Have victim sit with head forward, NOT back
- Ensure that airway remains open
- Keep victim calm

Treat Bites and Stings

- If a bite or sting is suspected, and the situation is a non-emergency (no indication of anaphylaxis)
  - If stinger is present remove it by scraping off with edge of credit card or other stiff, straight-edged object
  - Wash site thoroughly with soap and water
  - Place ice (wrapped in a towel) on site for 10 minutes on/10 minutes off.
  - It is ok to draw a border around the reddened area so that you can monitor any reaction.

Anaphylaxis

- Severe allergic reaction – food, insect stings, medications, latex
  - Itching, hives
  - Short of breath, wheezing
  - Swollen face, throat or tongue
  - Nausea, vomiting
  - Dizziness, confusion, weakness, weak pulse
  - Ask victim if they have an Epi-Pen & hand it to victim if available
CERT members do not administer medications

- CERT members do not administer medications, including over-the-counter products such as aspirin.
- CERT members can assist victims in administering their own medications (e.g., Epi-pen).

MEDICAL PROTOCOLS MANUAL

IF YOU FORGET...
LOOK IT UP
YOU EACH HAVE A
MANUAL CALLED

GUIDELINES &
TREATMENT PROTOCOL
TRAINING MANUAL

DON'T FORGET

DOCUMENT!

- What you find
- Care you've given
- Where they went
QUESTIONS???

Unit Summary

- Public health concerns related to sanitation, hygiene, and water purification
- Organization of disaster medical operations
- Establishing treatment areas
- Conducting head-to-toe assessments
- Treating wounds, fractures, sprains, and other common injuries

DMO Acronyms

- ABS – Airway/Breathing, Bleeding, Shock
- CFW – Color, Feeling, Warmth
- DMO – Disaster Medical Operations
- HTTA – Head to Toe Assessment
- LLF – Look, Listen, Feel
- Med Ops – Medical Operations
- PPE – Personal Protective Equipment
- Ops – Operations
- RPM – Respiration, Perfusion, Mental status
- SAR – Search And Rescue
- STart = Simple Triage
- stART = And Rapid Treatment
Homework Assignment

1. Read Unit 5, Light Search and Rescue, to be covered in next session
2. Wear appropriate clothes for hands on exercises on the floor at next session
3. Practice complete head-to-toe assessment on friend or family member
4. Do the homework handouts.