

## Community Emergency Response Team



### Disaster Medical Operations Part I

Released: 01 January 2026 **Contra Costa CERT Coalition**

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## Community Emergency Response Team


- 🧑‍🚒 Personal safety is ALWAYS the number one priority
- 🧑‍🚒 Show up prepared
  - Wear appropriate clothing and footwear, have WATER
  - Wear PPE – your personal protective equipment ...gloves, helmet, goggles, mask, boots, etc.
  - Have at least one communications device: cell, radio, etc.
- 🧑‍🚒 Work as a team
- 🧑‍🚒 Size-up - maintain situational awareness
- 🧑‍🚒 The CERT goal is to do the  
**Greatest Good for the Greatest Number**
- 🧑‍🚒 *Hope for the best but plan for the worst!*

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## Unit Objectives

- 🧑‍🚒 Identify “**Three Killers**” **ABC**
- 🧑‍🚒 Apply techniques for
  - Opening **A**irways
  - Controlling **B**leeding
  - Treating (**C**irculatory) **S**hock
- 🧑‍🚒 Conduct triage under simulated emergency conditions



“Logic clearly dictates that the needs of the many outweigh the needs of the few.”  
Spock in [The Wrath of Khan](#) (1982)

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## Death from Trauma

- 🧑‍🚒 Overwhelming and irreversible damage to vital organs, death within minutes
- 🧑‍🚒 Excessive bleeding, death within seconds or minutes
- 🧑‍🚒 Infection or multiple organ failure, death in several days or weeks







**40% could be saved!**


**90% of disaster survivors are rescued by other survivors!**

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### PPE – Personal Protective Equipment

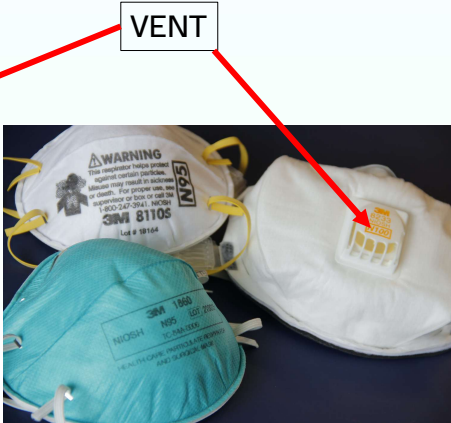
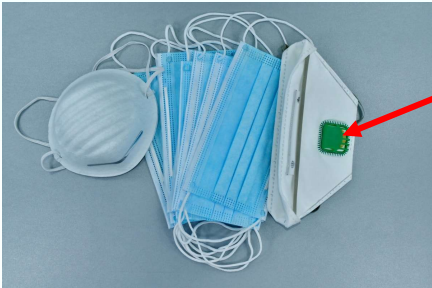
-  Helmet
-  Goggles
-  N95 mask
-  Work gloves
-  Sturdy shoes or boots
-  Non-latex exam gloves



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### PPE – Types of Masks

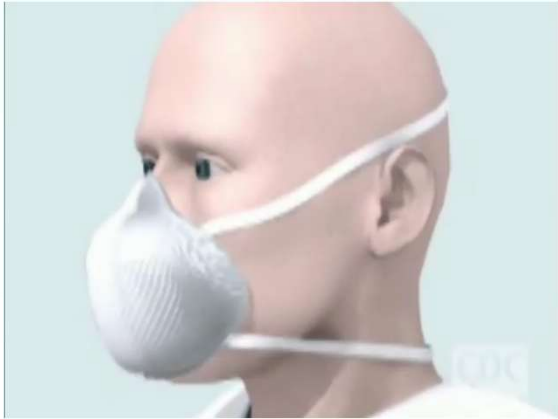


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**PPE - N95 mask**

🧑 How to put on / take off an N95 mask

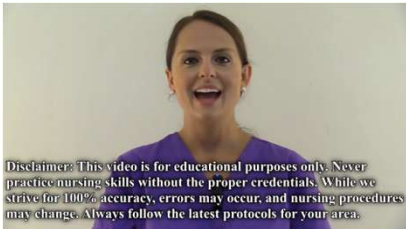


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**Demo & Practice - PPE - Gloves**

- 🧑 How to put on / take off surgical gloves
- 🧑 Practice !
- 🧑 New gloves for every patient - if you can
- 🧑 Wash or sanitize hands after removing gloves



Disclaimer: This video is for educational purposes only. Never practice nursing skills without the proper credentials. While we strive for 100% accuracy, errors may occur, and nursing procedures may change. Always follow the latest protocols for your area.

[https://www.youtube.com/watch?v=xTYioOo\\_\\_6U](https://www.youtube.com/watch?v=xTYioOo__6U)



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PPE – Personal Protective Equipment

**IF IT'S WET or STICKY and  
NOT YOURS**


**DON'T TOUCH IT!**




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The Killers - **ABC**

 **A**irway Obstruction


- Lack of oxygen can cause brain damage and death in very few minutes

 **E**xcess **B**leeding

- Tissues die if not supplied with oxygen
- Can happen in as little as 20 seconds

 **S**hock (**C**irculatory collapse)

**Life-threatening conditions must receive  
*immediate* treatment !**



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## How to Approach a Patient

- 👤 Size-up: Check the scene for safety
- 👤 Be sure patient can see you
- 👤 Identify yourself
  - Your name, organization and training
- 👤 Request permission to evaluate and treat

"I am \_\_\_\_\_, from \_\_\_\_\_. I have first aid training. May I help you?"

- 👤 Respect cultural differences
- 👤 Protect patient privacy



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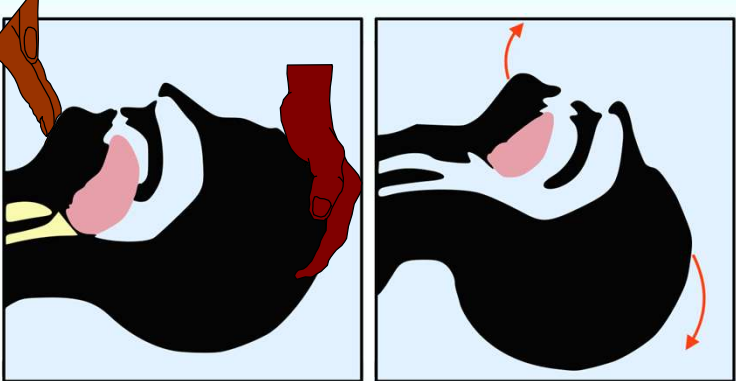
## Unconscious Patient

- 👤 You have *implied consent* to treat
- 👤 Tap and shout
- 👤 Check for breathing. Ear over patient's mouth while looking at the chest
  - Look – for chest rise
  - Listen – for air exchange
  - Feel – abdominal movement
- 👤 Evaluate and if necessary, open airway and repeat **once** more

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### Opening the Airway




Palm on forehead, 2 fingers under chin and pull the jaw upward while tilting the head backwards slightly

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### Let's Practice!



### Head Tilt / Chin Lift

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### Bleeding



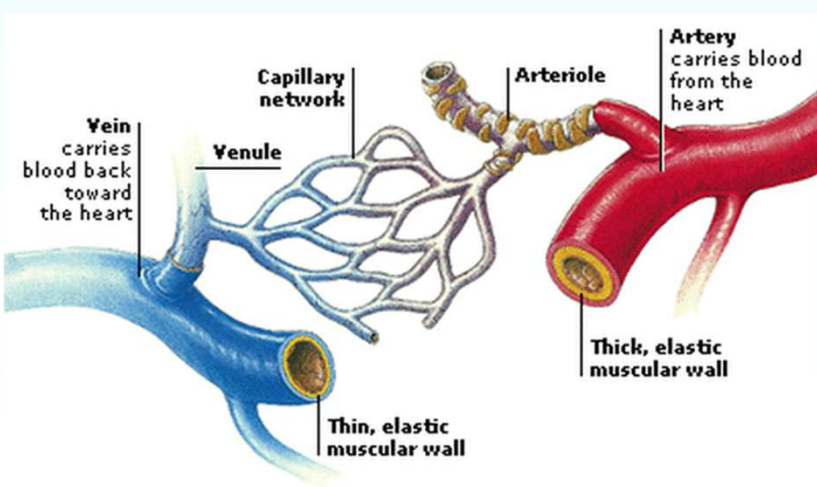
-  Arterial ... spurting
-  Venous ... flowing
-  Capillary ... oozing

***Losing one liter can be life-threatening***

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### Blood Flow



**Vein** carries blood back toward the heart

**Venule**

**Capillary network**

**Arteriole**

**Artery** carries blood from the heart

**Thin, elastic muscular wall**

**Thick, elastic muscular wall**

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## Life-Threatening Bleeding


- 👤 Spurting
- 👤 Pooling
- 👤 Soaking through clothes or bandages
- 👤 Amputation

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## Bleeding Control – Direct Pressure

- 👤 Wear PPE (gloves, goggles, mask)
- 👤 Locate the bleeding source
- 👤 Apply firm pressure directly to the source until the bleeding stops
- 👤 Bulky layers between the bleeding source and your hands decrease effectiveness of pressure



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## Bleeding Control – Tourniquet

- 👤 Tourniquets can stop life-threatening bleeding from limb injury
- 👤 Their use remains a subject of debate. Tourniquets stop all blood flow so all tissue below the tourniquet will die if patient doesn't get advanced care
- 👤 Tourniquets have low incidence of adverse events provided that patient receives prompt advanced care
- 👤 Tourniquets are now recommended for **uncontrollable life-threatening** limb bleeding. Better to lose a limb than a life
- 👤 Tourniquet training will be in Disaster Medical Operations - Part 2

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## Shock

- 👤 Result of ineffective circulation of blood
  - Sufficient oxygen not delivered to cells
- 👤 Remaining in shock will lead to death of:
  - Cells
  - Tissues
  - Entire organs
  - Patient
- 👤 Types of shock
  - Hypovolemic shock – blood loss
  - Cardiogenic shock – heart not pumping
  - Septic shock – infection in bloodstream

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## Signs of Shock

- 🧑‍🚒 **Confused or unconscious**
- 🧑‍🚒 Weak, dizzy, restless or irritable
- 🧑‍🚒 Weak, **rapid pulse**
- 🧑‍🚒 Shallow, **rapid breathing**
- 🧑‍🚒 Pale, cool, moist skin
- 🧑‍🚒 Blue lips or fingernails
- 🧑‍🚒 Nausea and vomiting



***Treat any unconscious victims for  
SHOCK***

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## Shock Treatment

- 🧑‍🚒 Control major bleeding
- 🧑‍🚒 Place in Recovery Position
- 🧑‍🚒 Maintain body temperature
  - Replace wet clothing with dry layers
  - Place something between survivor and ground
  - Shield from elements
- 🧑‍🚒 Loosen restrictive clothing



Left Lateral Recovery Position

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## Recovery Position

- 🛑 Airway better defended in the “recovery position”
- 🛑 Two rescuers if possible
- 🛑 Minimize movement of severely injured patients
- 🛑 Place pregnant women left side down if possible
- 🛑 Check for breathing before moving on

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## Recovery Position Demo




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Break

*Let's take a 5 minute break*



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Break

5   4   3   2   1




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Break

Break is almost OVER




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Break


Break is OVER  
Let's get back to learning



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## Multi-Casualty Incident Definition

 A Multi-Casualty Incident (MCI) is any situation that overwhelms the normal emergency response capability



An MCI is also known as a Mass Casualty Incident or a Mass Casualty Event











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## Typical Multi-Casualty Incidents

-  Earthquakes
-  Terrorist Events
-  Urban Wild Lands Fires
-  Motor Vehicle Accidents
-  Floods
-  Tornadoes
-  Hurricanes
-  Explosions
-  Train derailments
-  Hazmat



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## CERT Size-Up

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:  
ALL CERT  
SIZE-UP IS A  
CONTINUAL  
PROCESS**

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## Triage

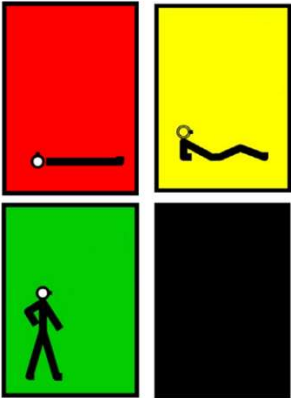
**TRIAGE – French term meaning “to sort”**

- 🧑‍🚒 During triage, survivors are evaluated and prioritized according to the urgency of treatment needed
- 🧑‍🚒 Spending a lot of time trying to save one life may prevent a number of other patients from receiving the treatment they need
- 🧑‍🚒 Triage is a *Perishable Skill* and must be practiced regularly

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### The START Triage System



**S**imple  
**T**riage  
**A**nd  
**R**apid  
**T**reatment

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### START Categories

-  **GREEN**
-  **RED**
-  **YELLOW**
-  **BLACK** or stripe



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## The START Triage System

Effective January 1, 2019,  
in Contra Costa County,  
the Triage names will  
**NOT** be used,  
only the COLORS

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## Triage Steps

1. Size-up
2. Conduct voice triage
3. Follow a systematic route
4. Start where you stand
5. Treatment doesn't start until you and patient are safe
6. Evaluate and tag each patient
7. Document Triage results

**Treat ONLY "Killers"... airway, bleeding, shock**

**REDS are "Immediates"**  
and will be transported to higher level of care ASAP

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### Triage Pitfalls

- 👤 No team plan, organization, or goal
- 👤 Indecisive leadership
- 👤 Ignoring personal safety
- 👤 Too much focus on one patient or the “loudest” (screamer) patient
- 👤 Treatment of non-“killer” injuries (rather than triage) performed

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### Triage - **GREEN**

- 👤 Walking wounded
- 👤 Do not require immediate/urgent care
- 👤 Use as helpers to care for others
- 👤 Direct **GREEN** patients to the casualty collection point (CCP) or treatment area for detailed assessment and medical care

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Triage Patient Assessment

If life-threatening bleeding is detected at any time in a patient,




**treat the life-threatening bleeding before** proceeding with other steps in the triage assessment

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Triage Patient Assessment - **RPM**

**Three things to check ...**


 <b>R</b> espirations	<div style="border: 1px solid black; padding: 10px; width: 80%; margin: auto;"> <p style="font-size: 24pt; margin: 0;"><b>30</b></p> <p style="font-size: 24pt; margin: 0;"><b>2</b></p> <p style="font-size: 24pt; margin: 0;"><b>Can do</b></p> </div>
 <b>P</b> erfusion	
 <b>M</b> ental Status	

Anyone who is **unconscious** is a **RED** by definition!

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## RPM ... Respirations


 **Target Range:**

- Adults: **under 30 breaths** per minute
- Children to 12 years: 15 – 45 breaths per minute
  - Depends on the size of the child
  - Infants breath faster than larger children
  - Go by body size, not age


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## RPM ... Respirations


 **No breathing**

- Open airway, if still not breathing, try a second time
- If still not breathing, tag as **BLACK** and move on to next person

 **If breathing, count breaths**

 **Out of range for breaths per minute**

- Place in recovery position
- Tag as **RED**, move on to next person

 **Within range for breaths per minute**

- Go to the next step... **Perfusion**

30

2

Can do

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### RPM ... Perfusion

- 👤 Target: Reperfusion in **under 2 seconds**
- 👤 Blanch test
- 👤 If capillary refill takes more than 2 seconds  
*OR* no radial pulse
  - Treat obvious severe bleeding
  - Place in recovery position
  - Tag as **RED**,  
and move on to next person
- 👤 Less than 2 seconds
  - Go to the next step... **Mental Status**

**30**  
**2**  
**Can do**

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### RPM ... Mental Status

- 👤 Target: Follow simple command
- 👤 Cannot follow directions
  - Tag as **RED**, place in recovery position  
and move on to next person
- 👤 Can follow directions
  - Tag as **YELLOW** ,  
and move on to next person




**30**  
**2**  
**Can do**

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**RPM** Mnemonic

**30**  
**2**  
**Can do**



-  Under **30**    Respirations / minute
-  Under **2**    Seconds - Cap refill
-  **Can Do**    Follows simple commands

*If fail any test, patient is **RED***

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Triage - Putting it Together - **GREEN**


-  Voice-triaged, “walking wounded”
-  May be injured but can walk away from scene to treatment area

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### Triage – Putting it Together - **BLACK**

- 👤 Other terms: **DECEASED, MORGUE** or **NON-SALVAGEABLE**
- 👤 Obviously dead
- 👤 Pulseless
- 👤 Not breathing after two attempts to open airway
- 👤 Mortal injuries
  - Cannot be saved with available care facilities
- 👤 Do not move **BLACK** casualties from mass casualty site




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### Triage – Putting it Together - **RED**

- 👤 Alive with life-threatening injuries
- 👤 Patient requires **immediate** care
- 👤 Fails *any* **RPM** check
  - Adult > 30 respirations per minute
  - Child outside 15 – 45 respirations per minute
  - Capillary refill > 2 seconds or no radial pulse
  - Cannot follow simple commands



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Triage - Putting it Together - **YELLOW**

- 👤 Serious non life-threatening injuries
- 👤 *Did not walk out of scene*
- 👤 **RPM** (all three) within acceptable limits
- 👤 May have broken bones
- 👤 May be extrication problem
- 👤 May have chest pains, etc.

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START Video



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## Triage Operations Review

-  **Size Up ... What's happening?**
  - Check the scene
  - Stop, look, listen and think
-  **Assess your situation ... What could happen?**
-  **Develop a plan of action ... What will we do?**
  - Conduct voice triage, get walking wounded out
  - Start where you stand
  - Follow a systematic route
  - Use **RPM** to evaluate and tag each patient
  - **Only** allowed treatments in triage are:  
**Open airway; Stop major bleeding; Recovery position**
  - Call for **REDS** to be urgently transported to advanced care!
-  **Document Triage results**

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## START Triage Exercise

SCENARIO: December 23rd, 1700 hrs. A bus has gone out of control at the Walnut Creek BART station. It careened through the lower BART plaza, hitting commuters and Christmas shoppers. The bus continued downhill finally crashing into rush hour traffic on Ygnacio Valley Rd. Several smashed cars have caught fire.

*The first arriving fire engine has already tried once to remove all patients who can walk (**Greens**) to the South parking lot.*

Begin triaging the remaining patients using START triage principles. Identify the category of the patients (GREEN, BLACK, RED, and YELLOW) and what treatment you might render according to START (opening of airways, application of direct pressure for bleeding). Write answers below each patient.

**30**  
**2**  
**Can do**

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## START Triage Exercise

1. 30yo male with a compound fracture of left tibia, bleeding moderately. Resp. rate is 24, cap refill < 2 sec. Follows simple commands.	8. 7yo old female lying on the ground, left leg amputated below the knee. Moderate bleeding. Resp. rate is 38. Cap refill < 2 sec. Follows simple commands.
2. 18yo female sitting feeling faint with abrasion to forehead and a bloody nose. Resp. rate is 28. Cap refill < 2 sec. Follows simple commands.	9. 42yo female with an open fracture left ankle. Resp. rate is 28. Cap refill < 2 sec. Follows simple commands.
3. 18yo male complaining of chest pain and SOB. Resp. rate is 40. Cap refill 4 sec. Follows simple commands.	10. 21yo female with abrasion to forehead, is 8 months pregnant and in labor. Resp. rate is 36. Cap refill < 2 sec. Follows simple commands.
4. 23yo male with impaled metal pole through right chest. Resp. rate is 26. Cap refill < 2 sec. Follows simple commands.	11. 12yo male with 3 <sup>rd</sup> degree burns over 50% of body. Resp. rate is 28. Cap refill < 2 sec. Follows simple commands.
5. 50yo male with 2 <sup>nd</sup> /3 <sup>rd</sup> degree burns over 70% of body. Resp. rate is 26. Cap refill < 2 sec. Follows simple commands.	12. 64yo female walking around crying. No injuries seen. Resp. rate is 24. Cap refill < 2 sec. Follows simple commands.
6. 75yo male lying on the ground. Gurgling respirations after 2 attempts to open airway. Capillary refill > 2 secs. Unconscious, unresponsive.	13. 65yo male bus driver slumped over in seat. Resp. rate is 0. No radial pulse. Unconscious and unresponsive.
7. 40yo male lying on the ground with blood coming out of ears and nose. Resp. rate is 0. No radial pulse.	14. 28yo female walking around with abrasion to forehead. Repeatedly asking "Where's Billy?" Resp. rate is 18. Cap. Refill < 2 secs. Does not follow "squeeze my fingers" command.

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## START Triage Exercise

15. 28yo male lying on ground with abdominal pain. Resp. rate is 24. Cap refill > 2 sec. Follows simple commands.	23. 20yo male sitting up with large scalp laceration bleeding heavily. Resp. rate is 24. Cap refill < 2 sec. Follows simple commands.
16. 44yo male sitting up with dislocated shoulder. Resp. rate is 36. Cap refill is < 2 secs. Follows simple commands.	24. 44yo male sitting up with chest pain. Resp. rate is 24. Cap refill < 2 sec. Follows simple commands.
17. 25yo female with large abdominal evisceration. Resp. rate is 0. No radial pulse. Unconscious and unresponsive.	25. 56yo female bilateral femur fractures. Resp. rate is 28. Cap. Refill is > 2 seconds. Conscious and follows commands.
18. 11yo female partial amputation left arm, blood spurting from wound. Resp. rate is 28. Cap refill > 2 seconds. Unconscious.	26. 58yo male with massive facial trauma. Resp. rate is 0. Reposition Airway, resp. = 0. Cap refill < 2 sec. Unconscious and unresponsive.
19. 67yo male lying on ground. No obvious injuries. Resp. rate is 0 after 2 attempts to open airway. Cap. Refill is > 2 secs.	27. 11yo female lying on ground, with abrasions to face. Resp. rate is 20. Cap refill < 2 secs. Conscious but does not follow commands.
20. 28yo female with fracture to left wrist. Resp. rate is 28. Cap refill is < 2 seconds. Follows simple commands.	28. 76yo male with deep laceration to left thigh. Heavy bleeding. Resp. rate is 24. Cap refill > 2 sec. Follows simple commands.
21. 36yo male with neck pain. Can't feel legs. Resp. rate is 24. Cap refill < 2 sec. Follows simple commands.	29. 51yo male with abdominal pain. Resp. rate is 28. Cap. Refill > 2 secs. Follows simple commands.
22. 24yo female with back pain. Resp. rate is 28. Cap refill < 2 sec. Follows simple commands.	30. 85yo male with deep cuts to both forearms. Resp. rate is 24. Capillary refill > 2 secs. Follows simple commands.

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## Change

- The following slides have been moved to Disaster Medical Operations Part I from Disaster Medical Operations Part II to accommodate classroom timing.
- You can follow along in the Participant Manual by going to MED II Slide 78 - 86

Visual DMO2.54

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## Bites and Stings

- 🐛 If a bite or sting is suspected, and the situation is non-emergency:
  - Remove stinger if still present by scraping edge of a credit card or other stiff, straight-edged object across stinger
  - Wash site thoroughly with soap and water
  - Place ice on site:  
10 minutes on,  
10 minutes off



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## Anaphylaxis

- 👤 Anaphylaxis is a serious, life-threatening allergic reaction. The most common anaphylactic reactions are to foods, insect stings, medications and latex
- 👤 Check airway and breathing
- 👤 Remove constrictive clothing and jewelry
- 👤 Find and help administer victim's auto-injector following package instructions
- 👤 Write time administered on victim's skin
- 👤 Watch for signs of shock and treat appropriately



Visual DMO2.56

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## Hypothermia

### Primary signs and symptoms:

- 👤 Body temperature of 95° Fahrenheit (35° Celsius) or less
- 👤 Redness or blueness of the skin
- 👤 Numbness accompanied by shivering

### Later stages of Hypothermia:

- 👤 Slurred speech
- 👤 Unpredictable behavior
- 👤 Listlessness and confusion

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## Treating Hypothermia

- 🧑‍🚒 Remove wet clothing
- 🧑‍🚒 Wrap victim in a blanket or sleeping bag and cover head and neck *or*
- 🧑‍🚒 Place victim in warm bath
- 🧑‍🚒 Protect victim from weather
- 🧑‍🚒 Provide warm fluids to conscious victims
  - No alcohol, caffeine or soda
- 🧑‍🚒 Place unconscious victim in recovery position

***Even mild degrees of hypothermia can have serious consequences***

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## Frostbite

- 🧑‍🚒 Frostbite is an injury caused by freezing of the skin and underlying tissues
- 🧑‍🚒 Symptoms include:
  - Skin discoloration
  - Burning or tingling sensation
  - Partial or complete numbness



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## Treating Frostbite

-  Immerse injured area in warm (NOT hot) water until tissue is soft, red or purple
-  Warm slowly!
-  Do NOT allow part to re-freeze
-  Do NOT massage
-  Wrap affected body parts in bulky dry, sterile dressing









wikiHow

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## Stages of Hyper**ER**thermia

-  Hyperthermia comes in many stages, from heat stress through heat stroke
-  **Heat cramps** are muscle spasms brought on by over-exertion in extreme heat
-  **Heat exhaustion** results from exercising or working in extreme heat, resulting in loss of bodily fluids
-  **Heat stroke** occurs when the body's temperature regulation system shuts down and the body temperature rises so that brain damage or death may result
-  Special attention is needed when wearing PPE in heated environments



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## Symptoms of Hyp**ER**thermia



<u>Heat Exhaustion</u>	<u>Heat Stroke</u>
<b>Heavy sweating</b>	<b>Red, hot, dry skin (no sweating)</b>
<b>Not Confused</b>	<b>Confusion</b>
Tiredness	<b>Unconsciousness</b>
Cold, pale, clammy	Body temperature over 103°F
Rapid, strong pulse	Fast, weak pulse
Muscle cramps	Throbbing headache
Dizziness or headache	Dizziness
Nausea or vomiting	Nausea

*Heat Stroke is the most severe form of hyp**ER**thermia and is a **life-threatening emergency!***

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## Treating Severe Hyp**ER**thermia

-  Remove from heat to cool environment
-  Cool body – **immediate water immersion**/shower/  
garden hose/evaporative cooling if heat stroke suspected  
– before transport
-  Sports drink (not salt tablets) or water, if sports drink-like  
solution not available – slowly, avoid vomiting
-  No food or drink if patient is experiencing vomiting,  
abdominal cramping, or is losing consciousness
-  If heat exhaustion does not improve in 15-20 min or if  
there are signs of heat stroke, triage status is **red**, patient  
requires **immediate transport to advanced care**
-  Must be symptom-free for 24 hours before returning to  
work and may need to stay out of heat for a while

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Questions ?



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Takeaways

 **YOUR SAFETY IS PARAMOUNT!**

- Wear PPE
- Medical treatment doesn't start until you (and your patient) are safe



 **THE KILLERS**


- Airway
- Bleeding
- Shock

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To Do

-  **Look into taking a CPR and/or Stop the Bleed class**
-  **Put a couple pairs of non-latex gloves in your everyday carry bag**



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